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FORTNIGHTLY
REVIEW



Hearings

THE SO-CALLED safety hearings of the Senate subcommittee on aviation which Senator Bennett Clark has been conducting have resulted so far in one very dull thud.

Instead of an open-minded constructive investigation into airline accidents, the hearings have been a one-man show under the prodding of a technical adviser with the apparent purpose of digging up ancient data which is supposed to be sensational.

Introduced into the hearings was a report made by a researcher of the National Advisory Committee for Aeronautics back in 1937 which was intended to prove that the Douglas DC-3 transport was unstable and possessed dangerous stalling characteristics.

It is perhaps unfortunate for the investigators that the Douglas DC-3 transport has been standard equipment around the world for many years and has flown so many cumulative millions of miles that a statistician would be baffled if he attempted to strike a total.

The Clark committee hearings were supposed to show that the NACA report had been kept very secret. In other words, one or more government agencies were criminally negligent.

Such stuff and nonsense was soon repudiated, however, and it is perhaps fortunate that the newspapers were too pre-occupied with war news and national defense to pay attention to ill-founded muck raking.

(Turn to page 24)

Fastest and Largest Transport Developed by Hughes and Frye

OPM OUTLINES NEW SITE REQUISITES

Recommendations Include Six Minimum Requirements for Locations of Plants

ELEMENTS considered by the Office of Production Management as minimum site requirements for new aircraft plants are outlined in a special memorandum prepared by OPM's plant site committee as a guide for proper location of emergency facilities needed by the Army and Navy for speedy defense production.

Although final decision in selection of a particular site rests largely with the War Dept., the recommendations outlined by the OPM group charged with responsibility to "review and approve" new plant locations are significant since they are known to incorporate suggestions of Army officials directing defense expansion.

OPM's blueprint for locating new (Turn to page 10, col. 3)

Ahead of Schedule



H. Mansfield Horner
General Manager of Pratt & Whitney, whose company in March shipped 1,200 engines to the U. S. and British.

Lockheed is Builder of 80 285-MPH Planes For TWA and PAA

THE LARGEST and fastest air transport airplane in the world is now under construction in the plant of the Lockheed Aircraft Corp. at Burbank, Cal.

The plane is the personal development of Howard Hughes, president of Hughes Tool Co., Houston Tex. and Jack Frye, president of Transcontinental & Western Air Inc., and is revolutionary in performance, flying range, speed and economy.

Known as the Constellation (Model 49), the landplane will carry 64 passengers, including crew of seven, will cruise at 285 miles per hour, has a top speed of well over 300 miles per hour, and a flying range of 5,000 miles.

Forty of the huge planes are on order for TWA Inc., and 40 have been ordered by Pan American Airways Inc., involving a construction program of over \$15,000,000. The prototype is now being built and most of the material for the pro-

(Turn to page 32, col. 2)

Administration Studies Plan for Additional Bomber Plants for 5,000-6,000 Unit Output

New Scheme Would Follow Original Program's Pattern; Midwest Sites Considered

FOLLOWING the pattern of the original program for 3,600 bombers to be built at four inland plants operated by aircraft manufacturers and fed with subassemblies supplied by the automobile industry, the Administration is now reported to have plans for a new bomber program involving at least four new assembly plants, over and above the original four being constructed at Omaha, Kansas City, Tulsa, and Ft. Worth.

Administration officials have replied that details have not been

definitely decided and that Army, Navy, and British experts are handicapped in mapping out a plan by the complexity of the problem. As to the total overall number of ships in the new scheme, 6,000 and 5,000 are most frequently mentioned.

Emphasizing that "some 30,000 to 40,000 parts go into a bomber," spokesmen state that efforts are being made to decide on what types to build and in what quantity, how far to go on machine tooling, how to effect a flow of materials, etc.

It is believed the program will include the Consolidated B-24 and the Boeing B-17D, but probably not the huge Douglas B-19, although

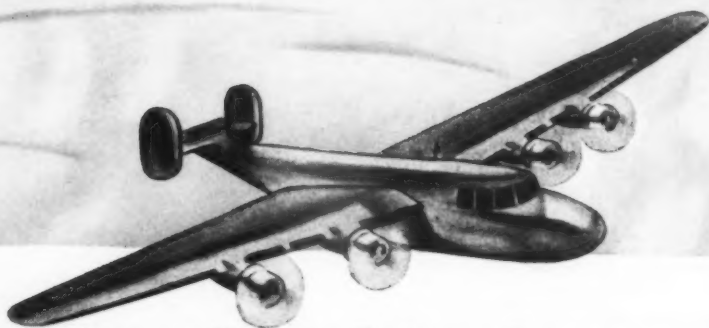
aircraft production spokesmen of the Office of Production Management qualify these reports with the remark that "what may be in the program today may be out tomorrow."

The first four assembly units are expected to begin operations by next fall. Some thought has been expressed that the total of eight assembly plants may be insufficient for war demands. Locations of the new four are not definite but are expected to include Oklahoma City as the first site. Other locations under consideration as this issue went to press are at various points (Turn to page 8, col. 2)



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Immediate Americanization of Latin American Aviation Urged to Protect Future Markets of U. S. Industry

Irving Taylor Urges Replacement of Foreign-Made Aircraft With U. S. 'Lend-Lease' Aid; Asks Operators to Put Patriotism First

THE U. S. "is flirting with the possibility that our leading world position in aeronautical production and civil aviation activity may be scuttled over night," and is already late in planning to protect itself from loss of its entire export market after the war, Irving H. Taylor, manager of the trade development department of the Aeronautical Chamber of Commerce, told the Southwest Aviation Conference at Wichita, Kan., on Apr. 25.

Taylor strongly urged a "lend-lease" arrangement by which the U. S. would aid the development of airlines of all kinds in South and Central America, and advocated immediate expenditure of \$10,000,000 with which to replace foreign-made aircraft in Latin America.

He also said the program must not be retarded by bickering over which companies shall or are best qualified to operate or participate in the operation of mail and feeder line services and said the operators "must subordinate their selfish interests and cooperate fully in advancing aviation."

"The danger that threatens does not immediately point to a hopeless set-back in our domestic, civil aviation activities," he said. "It will come from outside our own borders. The producers of our aviation equipment, throughout their lengthening history, are now, and certainly will in the future, depend for their existence and growth on the orders which come from abroad.

"Cut off or seriously curtail this business with the resultant disastrous effect on our producers and you would see a rapidly enforced curtailment of design development, higher prices to domestic consumers for less modern equipment—both at home and abroad. Except as our government might be in a position to subsidize heavily the manufacturers, American aviation equipment would seriously lag in the competitive race.

"Loss of much of our country's export business would so blight our production and employment in all fields that there just would not be any impetus behind our domestic aviation. Airlines—passenger and freight—would have to reduce schedules and discontinue service on unprofitable routes; a great many

airports would, through disuse, revert to cow pastures; fixed base operators, schools and flying clubs would fold up.

"This may seem to be a somewhat exaggerated picture of drabness setting forth what American aviation would be like as a result of an economic blockade and aggression brought about through our own neglect—but, 'it can happen here.'

"It is certain that the greatly expanded aviation production and operating organizations of the U. S., Britain, Germany, Italy, Japan, Canada, and presumably Russia, are not going to find enough business to even barely exist after military demands ease off or virtually cease.

"This is a vital race in which this country up to the present, is least encumbered. The question is, are we studying our problem of national and hemisphere defense from all angles, determined to do an effective protective job, or are we concentrating all of our resources on the military front while leaving our flanks unprotected and wide open to a powerful economic attack, which is the nature of the only hostile force now openly operating in this hemisphere?"

Turning to facts about possible outlets for U. S. products, Taylor said the extension of U. S. airlines to South America or our assistance in civil aviation development in the southern hemisphere "is not primarily a matter of selfish or vital interest either to our aeronautical producers or to the airline operators themselves—there are producers in a great many other fields and our national welfare who will benefit far more from such a move than will our own industry."

"Please remember," he said, "that when I, as a representative of the aviation manufacturing industry,

Exports Important to Industry

During the past 30 years the U. S. aircraft manufacturing industry has sold abroad aircraft, engines, and other aeronautical products valued at slightly over \$562,000,000, Irving Taylor told the recent Wichita conference. This includes 10,460 planes. Roughly estimated this represents between 28% and 30% on a value basis of the industry's entire output for the period. "These sales, returning the major portion of the industry's net profit through its lean years, put the U. S. well in the lead, aviation-wise, throughout the world," he said. Last year about 60% of our dollar output went overseas, mostly military equipment for the allies. The Latin American market group, however, bought only 10% of our total exports between 1933 through 1940 and has been dwindling recently to 1.5% of our total output last year.

talk about the urgent need for airline expansion to and within South America, I am not inspired by purely selfish motives to offer a post-war profit panacea.

"There are far greater and more fundamental considerations of national welfare and security which are immediately at stake."

Taylor then described the airlines now operating in South America and said that at the beginning of this year there were 44 airlines, eight of which are international in character.

Of the 44 lines, 13 lines are owned by or are closely affiliated with U. S. interests. Of these 13, four are international (Pan American, Pan American-Grace, TACA, and Caribbean-Atlantic), and nine are essentially local operations. Using U. S. equipment, these lines serve a network of 48,593 miles, or 50% of the Latin American air route total, and last year flew 17,395,576 miles, or better than 60% of the Latin American total.

Then there are 20 airlines both locally operated and controlled which represent 25% of Latin American air route mileage and last year flew 20% of the Latin American miles. Taylor said these local lines may be expected to show the greatest increase of activity in the years immediately ahead.

The remaining nine airlines, two international and seven local, are reported to be under Axis domination "through outright ownership or other degree of influence," he said.

"These German-Italian lines move freely over routes aggregating 21,762 miles—better than 22% of the total—and last year flew about 3,700,000 miles—about 14% of the total. The low percentage of miles flown is in itself an indication of the uneconomic value of these operations. The important thing is that, without economic justification, these anti-American interests may operate freely and maintain ground establishments over almost 22,000 miles of strategically located routes in South America.

"This is the greatest menace to the Americas—to the furtherance of cultural, economic, political and commercial relations of this hemisphere neighbor group. And this is the kernel of the problem which I propose to discuss frankly here. If this problem is solved promptly, in the broader interest of the American peoples, there will inevitably be corollary individual gains realized by every native in this hemisphere."

"To meet the German political advance in Latin America, and to work

out in time this program of complementary economy, it is clearly in our national interest to provide whatever financial aid or equipment may be necessary to develop rapidly
(Turn to page 38, col. 1)

Calendar

- May 17-18—Louisiana State Air Meet, Lafayette Airport, Lafayette, La.
- May 18—Cotton Carnival Air Show, sponsored by Junior Chamber of Commerce, Municipal Airport, Memphis, Tenn.
- May 18—Membership Meeting of Sportsman Pilots Association, Cascades Inn, Hot Springs, Va.
- May 18—Michigan Dawn Patrol Flight to Blshop Airport, Flint, Mich.
- May 19-23—Western Metal Congress and Metal Exposition, Pan-Pacific Auditorium, Los Angeles, Cal.
- May 23-24—2nd Annual Aviation Conference of New England, Boston, Mass.
- May 25—Michigan Dawn Patrol Flight to Adrian, Mich.
- May 30—Dedication Program for the new Du Quoin Municipal Airport, Du Quoin, Ill.
- May 30-June 1—3rd Annual Efficiency Cruise of the Aero Club of Pittsburgh, Pa., to White Sulphur Springs, W. Va.
- June 1-4—19th Annual Convention of the National Aeronautic Association and 4th American Aviation Forum, Kentucky Hotel, Louisville, Ky.
- June 1-4—Aviation Writers Association, Annual Meeting, Louisville, Ky.
- June 1-6—Society of Automotive Engineers, Summer Meeting, The Greenbrier, White Sulphur Springs, W. Va.
- June 6-8—11th National Air Carnival, Birmingham, Ala.
- June 18-20—7th Annual National Intercollegiate Flying Club Air Meet, Sponsored by Ohio State University Flying Club, Middletown, O.
- June 20-21—Northwest Aviation Planning Council, Annual Meeting, Billings, Mont.
- June 28—July 13—12th National Soaring Contest, Elmira, N. Y.
- July 4-5—2nd Annual Air Show and Private Pilots Air Meet, Crowner Field, Wellsville, N. Y.
- July 18-19—Denver Air Show, Denver, Colo.
- Aug. 17-18—Sheldon Air Show, Sheldon Aeronautics Club, Sheldon, Ia.
- Aug. 25-Sept. 2—3rd Annual American Open Soaring Contest, Joliet, Ill.
- Sept. 17-19—National Petroleum Association, 39th Annual Meeting, Hotel Traymore, Atlantic City, N. J.
- Oct. 2-4—National Association of State Aviation Officials, Annual Convention, Providence, R. I.
- Oct. 30-Nov. 1—SAE National Aircraft Production Meeting, Biltmore Hotel, Los Angeles, Cal.

A Lockheed in Venezuela



LOCKHEED 14 of the National Airline of Venezuela, Linea Aeropostal Venezolana. This and other types of U. S. transport planes are being mentioned as desirable aircraft to replace European planes in Latin America. Irving Taylor of the Aeronautical Chamber of Commerce urges a "lend-lease" plan to aid Latin American countries to use U. S. equipment.

Legislative Review

Airlines Hand Over 13 Transports; No Further Demands Anticipated

AS PRESIDENT Roosevelt called in his "war cabinet" early this month to work out details for a vast expansion of the bomber program, the Office of Production Management announced that the aviation industry turned out 1,427 airplanes during April and production experts anticipated a jump to 2,000 monthly by late summer.

The White House announcement on the new bomber plants focused attention on the trend of military interest in long-range heavy bombing aircraft, considered imperative for the dual purpose of strengthening the hemisphere defense program and meeting the greatest need of the British air force.

While the final details of the new plan are being worked out, the administration turned to the airlines for a contribution to British aid calling for all transport equipment which could be spared from scheduled operations. Scraping the bottom of their restricted supply, the airlines handed over 13 ships with such ready cooperation as to elicit the public admiration of the Secretary of Commerce.

Speculation that air transportation might be sharply curtailed by future demands for more airline planes for Britain was temporarily put at rest by assurances of OPM officials that no plans are under consideration which would require suspension of present schedules. In fact, officials indicated that negotiations may soon begin looking toward priorities on equipment for 1942 commercial transport operations.

Investigation of airline accidents by the Senate Committee under Sen. Bennett Clark (D., Mo.) developed a minor sensation through disclosure in committee hearings of a report of the National Advisory Committee for Aeronautics back in 1937, concerning the characteristics of the DC-3 and stating that with the power off, stalling offers no problem but with the power on "the stall is dangerous."

Dr. George Lewis, NACA director of aeronautical research, advised the committee that although the report had not been made public as a matter of routine, it had been transmitted to all the airlines and instruction of pilots accordingly had been effected.

Problems of icing and of possible lightning effect on both pilots and planes also occupied the committee's attention as hearings continued. General atmosphere of the proceedings indicated that Senator Clark, a foe of CAA reorganization, is particularly interested in the efficiency of personnel and procedures of CAB and CAA, as they may relate to accidents occurring since the regulation of civil aviation was transferred to the Commerce Dept.

On the House side, Rep. Nichols' airline investigating committee began its fifth accident survey, with hearings in St. Louis.

Meanwhile, the House Appropriations

Committee is beginning consideration of the annual War Dept. appropriation bill, expected to contain substantial funds for procurement of additional planes, expansion of plant facilities and continuation of the air base and aviation training programs. The Navy supply bill, already through both houses, was recently enacted and Congress received a new Naval authorization bill including a proposal for establishment of 11 lighter-than-air craft bases to be used by the Navy. Contracts for six lighter-than-air craft are now underway, with a total of 21 more scheduled to be built this year, another 21 next year in the Navy's program for 48 of such craft.

Hoyt Subs for Larner at NAA Headquarters

Kendall K. Hoyt, publicity director of National Aeronautic Association for the

past year, has been appointed assistant manager and assistant secretary to coordinate and supervise NAA activities at Washington, D. C., headquarters, during absence of Lt. Col. G. deFreest Larner, NAA general manager, who has been ordered

to active duty with the Air Corps. Col. Larner was granted leave of absence for duration of his military service and given an expression of appreciation by NAA executive committee for "the rapid progress and growth of the association during his service as general manager."

Hoyt is an aviation writer with 12 years experience as Washington correspondent and publicity director for national organizations.



Hoyt

CAB Cites Pilot for Flight Over British Battleship

THE CAB on Apr. 26 ordered Hugh C. Robbins, described as an employee of Waco Sales Co., New York, to appear before an examiner at New York and show cause why his commercial pilot certificate should not be suspended or revoked.

On Apr. 6, CAB said, Robbins flew less than 500 ft. over New York Harbor, flew less than 1,000 ft. over a congested area of New York City, and flew closer than 500 ft. to another aircraft in flight. At the time, Robbins was carrying as a passenger a photographer of the New York Daily News, who made several photographs of the British battleship "Malaya," which was arriving in New York for repairs.

Secretary of the Navy Frank Knox had asked newspapers to refrain from photographing the ship, and suggested to Assistant Secretary of Commerce Robert Hinckley that action be taken against the pilot for violation of the Civil Air Regulations.

Robbins appeared before a CAB examiner in New York on May 2, and the Daily News reported that Ensign Rennix Isner, who was flying a ship nearby, denied that Robbins had been under 500 ft.

SPEAKING OFF THE RECORD



THE FIFTH COLUMN has been flying the airlines in Latin America long—familiarizing German and Italian pilots with terrain and flight conditions, putting wings on Nazi propaganda and supplying equipment and personnel on financial terms so soft as to be ridiculous. But not any more.

After months of study the Administration has decided to put U. S. dollars and U. S. equipment and technical aeronautical advice at the disposal of those Latin American countries which are anxious to rid themselves of totalitarian infiltration in airline operations and thus immeasurably strengthen Western Hemisphere defense. This is to be effected through a new bill (HR 4674) now before Congress broadening the authority of the Reconstruction Finance Corporation. The program has been worked out by the State Department in cooperation with the Army and Navy, civil aviation officials of the Commerce Department, and the RFC.

Contrary to first press reports of the new measure, the administration does not contemplate establishment of an international U. S. airline, government owned and operated, to run into Latin America. Rather it is proposed that the United States gain financial or management interest in local airlines replacing German and Italian control. Since many of the routes involved are both hazardous and unprofitable from the commercial viewpoint, private enterprise can not afford to undertake the job which is, strictly speaking, national defense proposition. Thus, in seeking what corporate entity should be used to handle the delicate situation, officials decided to let Uncle Sam shoulder the burden.

Simultaneously, plans are being worked out which will expand U. S. aid to these nations in pilot and mechanics training, airport construction and other related projects.

THE NATIONAL DEFENSE ADVISORY COMMISSION has disintegrated piece by piece until all its duties and divisions have been absorbed by the newer agencies, Office of Emergency Management and Office of Production Management—except two. The Transportation Division and one little committee alone remain. But this little committee has been causing aircraft and other defense manufacturers plenty of headaches lately.

The trouble arose over refusal of NDAC—what's left of it—to approve certificates of non-reimbursement which allow manufacturers to take advantage of quick amortization for tax purposes when they have spent their own money to finance plants required solely for defense production. Under the Second Revenue Act of 1940, NDAC as well as Army or Navy must pass on these certificates, and NDAC, claiming it is no "rubber stamp" for the War and Navy Departments, held up approval on the grounds that the manufacturer might be soaking the government for the cost of the plants through high prices of planes and other war supplies. NDAC's little committee on emergency plants wanted more evidence that this is not the case.

Now it appears that negotiation between the various departments is evolving a system whereby "rough figures" on profits will be furnished to satisfy the conscience of the defense agency. Several certificates were recently approved on the basis of "adequate" proof supplied by the Army and the Navy. The standard of future procedure, in the making as this issue goes to press, is expected to clarify the situation without requiring massive statistical data from harried manufacturers.

THE CIO is making "extravagant demands" in its latest petition presented to an important aircraft company, according to a statistical study of existing CIO and AFL labor contracts with nine of the major manufacturers. In making public an analysis prepared by the Aeronautical Chamber of Commerce, Col. John H. Jouett issued a plea to labor to cut down time lost from defense production through strikes or unrest as threat of strikes by making "reasonable and sincere demands at the outset."

As compared with CIO and AFL contracts already in effect, the petition of CIO, Local 683—which recently won an election in North American by a 70 vote margin of 6,016 votes cast—discloses: The highest CIO contract beginners' starting rate among the firms studied is 55c an hour compared with a CIO average of 52c. But at North American, CIO is asking 75c per hour, or 20c more than the top company and 22c higher than the industry's all-contract average. Another example—bonus rates for 2nd and 3rd shifts under the proposed CIO contract "are likewise out of all proportion to the other aircraft industry contracts." Although the industry average is 5c per hour increase for night shift work, CIO is seeking 10 cents. Other demands follow similar lines.

Col. Jouett notes that "the pattern of development of each of the aircraft contracts is similar. The initial demands are ordinarily extreme in character, but the terms finally agreed upon, usually after a strike or serious threat, are surprisingly uniform." Fully sympathetic with labor's right to bargain collectively, the industry merely asks that labor share with management not only profits but also the responsibility of speeding up defense production—by speeding up contract negotiations with "reasonable demands at the outset."

C. W. P.



Every village and city in the Western Hemisphere lies within the long range protection of the mighty B-19—newest Douglas Army bomber. The world's largest airplane, it has the world's most powerful engines—four Wright Cyclone 18's of more than 2000 HP each. It foreshadows America's rapidly approaching supremacy in the air.

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Senate Votes Down American Export Funds 44-35; Slater Says Fight Will Continue

Committee Had Voted Favorably in Spite of Strong PAA Opposition

THE SENATE voted down 44 to 35 on May 7 the request of the Post Office Dept. for funds with which to launch a new trans-Atlantic air mail service by American Export Airlines. The vote came after three days of heated debate and represents a decided defeat for American Export.

The Senate also turned down funds for a fourth weekly trans-Atlantic air mail trip by Pan American Airways. The House of Representatives had previously voted against appropriating funds to American Export, following the negative recommendation of the House appropriations committee. The Senate appropriations committee voted favorably by the slim margin of 13 to 12, but the action of the Senate effectively closes the matter as far as the present Post Office Appropriation Bill is concerned. The P. O. Dept. had requested \$1,200,000, but the Senate committee cut this to \$800,000.

Armed with a certificate of public convenience and necessity, approval by the President, and the endorsement of the Post Office, State, War, and Navy departments, American Export has three large Sikorsky flying boats on order for delivery starting in August, but has been consistently unsuccessful in obtaining funds from Congress with which to launch the service.

Pan American Airways protested the appropriation vigorously before members of the House and the Senate. Juan T. Trippe, PAA president, and numerous other officers and employees of the company made numerous presentations to Congress and its members to defeat the appropriation on grounds that it was equipped to serve the U. S. exclusively in its international air services.

Commenting on the action of the Senate, John E. Slater, executive vice-president of American Export said:

"The Senate's disapproval of the

air mail appropriation is a severe disappointment and a temporary setback. However, American Export Airlines will continue to rush to completion its fleet of long-range four-engine flying boats and will keep its organization intact.

"We have a certificate for trans-Atlantic air service from the Civil Aeronautics Board, our service has been approved by all executive branches of the government concerned, and we intend to fight for the air mail appropriation regardless of the time it takes.

"There is more involved than another air service to Lisbon. The issue is the whole question of the future of American flag overseas commercial aviation and its importance to the future commerce of the U. S. as well as to the national defense. At the moment under the war emergency Lisbon happens to be the only port available but that will not always be so."

Opposition to the appropriation for American Export was led by Senators Millard Tydings (D., Md.) and Josiah Bailey (D., N. C.) and joined actively by a number of others, including Senators Ellender of Louisiana, Holman of Oregon, and Austin of Vermont. Supporting the appropriation were Senators Carl Hayden, New Mexico Democrat, O'Mahoney, Wyoming Democrat, and Bone of Washington and Barkley of Kentucky.

Kansas Aviation Group

Elects Wilcox President

Kansas State Aviation Association at a recent meeting elected J. Howard Wilcox, Anthony attorney, president, succeeding Gale Moss, El Dorado. Other officers elected were F. X. Downey, Wichita, first vice president; Mrs. Matilda Miller, Topeka, second vice president; Moss, third vice president; Cecil Booth, Wichita, secretary; and Fred Swinson, Pratt, treasurer.

Named to the board of directors were Charles Blosser, Warren Blazier, W. J. Patterson, A. G. Balderson, Al Russell, Leo Rutledge, A. S. Swenson, E. C. Hay, Mrs. H. C. Duncan and Dr. Harold Nelson. Affiliation with the National Aeronautic Association was approved.

Newark Airport Set

For Reopening Soon

Newark Airport was expected to be re-opened to scheduled air transportation by May 15 as a result of signing of leases by four airlines on May 7 with the city of Newark.

The contracts are with American, United, TWA and Eastern and run for 10 years. The city is guaranteed a minimum of \$45,000 a year from the four lines for rental and landing fees and payment by the lines of salaries for control tower operators up to \$20,000 a year. The lines also have an option to lease at \$38,900 a year the hangar now being used by Brewster Aeronautical Corp. if and when the Brewster company vacates the hangar.

Edwin E. Aldrin, airport director, said 60 flights departing and arriving are expected at the start. The airport has been closed to scheduled traffic since May 30, 1940.

Pilots Back Lindbergh---Britain Too

A MAJORITY of the commercial airline pilots operating out of LaGuardia Field support Charles A. Lindbergh's isolationist views and his action in resigning his commission in the Army Air Reserve, but at the same time hope Britain can win, according to a canvass of more than 100 pilots made at the airport by the New York City News Association.

Two of the pilots, who said they represented "several dozen others," sent a telegram to Lindbergh expressing their support and offering to form a LaGuardia Field "Copperheads Club."

The survey indicated that more than 60 per cent of the pilots endorsed Lindbergh's non-interventionist stand, despite the fact that many of them hold Army reserve commissions.

Air Shows, Meets Set During Coming Months

INDICATING increased activity in aviation around the country's airports during summer months is news of air meets and air shows which will be held at Lafayette, La., Memphis, Tenn., and Wellsville, N. Y.

The Louisiana State Air Meet, scheduled for May 17-18 at Lafayette, will take the place this year of the usual state air tour. One feature of the two-day event will be a Civilian Pilot Training contest open to CPT flight contractor schools and their trainees. Awards will be given by the NAA. Gov. Sam H. Jones, and to the winner of the women's division by the 99ers.

Steadham Acker will direct the 14-act Cotton Carnival Air Show which will be staged under sponsorship of the Junior Chamber of Commerce at Memphis Municipal Airport on May 18.

Wellsville, N. Y., will be the site of the 2nd Annual Air Show and Private Pilots Air Meet on July 4-5. It was announced that guest pilots at Crownner Field will be given one dinner free each day. Contests with cash prizes will be open to all flyers. An aviator's ball is scheduled for the night of the 4th.

AWA to Meet With NAA

Members of the Aviation Writers Association will meet at Louisville, Ky., June 1-4, coincident with the 19th annual convention of the National Aeronautic Association and the 4th American Aviation Forum.

Overseas Aviation Too Big for One Company, Export Official Says

JAMES EATON, executive vice-president of American Export Airlines, told the Southwest Aviation Conference in Wichita on Apr. 25 that the effort of one company to enter U. S. international air service "is not a selfish fight between two companies but is a matter to concern the whole industry." He referred to Pan American Airways which has been the principal U. S. operator outside the borders.

"No one set of brains, no one method is sufficiently strong to do an adequate job for the American aviation industry in the development of foreign air commerce," he said. "America must prepare now for the great commercial war that everyone knows will follow the military war. Aviation will dominate that commercial war."

Eaton said he would like to see several American overseas airlines able to match foreign competition schedule for schedule. While he did not attack Pan American, he assailed the general threat of monopoly control.

Most of the Lindbergh supporters felt that he had a thorough grasp of the aviation aspect of international affairs and "knows what he is talking about." Many thought the U. S. ill-prepared to intervene in the war; others had criticism of Army methods.

Some of the pilots were opposed to turning over U. S. equipment to Britain and were apprehensive about the plan to take commercial planes from the airlines and send them to the anti-Axis nations.

Most of Lindbergh's opponents dismissed him with a few words, while others said they just could not see matters his way. A number of pilots refused to commit themselves at all because they "didn't want to get into trouble" or because the subject "was too dangerous."

NIFC Meets June 18; Loening Award Made, 1941 Officers Named

THE 7TH ANNUAL air meet of the National Intercollegiate Flying Club will be held at Middletown, O., June 18-20, under sponsorship of the Ohio State University Flying Club. It was announced following the NIFC's recent conference in Detroit at which time annual awards were made and officers elected for the coming year.

New officers of the organization are William Cuthbert, Kenyon College, president; Frank Habicht, Purdue University, midwest regional vice president; and Palmer C. Scarnecchia, National University, secretary-treasurer.

The Loening Intercollegiate Trophy for 1940-41 went to the University of Michigan Flying Club, which, with 27 members, logged 1,570 hours in the year ended Apr. 1, including instrument and night flying. Second prize was won by the University of Detroit Flying Club and third prize by the Ohio State organization.

Grover Loening, honorary president of the association, made the awards.

The NIFC is a division of the National Aeronautic Association and is organized in 65 colleges throughout the country.

SPA Meets May 18

Cass S. Hough, president of the Sportsman Pilots Association, has called a meeting of the membership to be held at Cascades Inn, Hot Springs, Va., on May 18.

Record-Making Helicopter Flight



ITS WHEELS REPLACED by pontoons, the Vought-Sikorsky Helicopter (VS-300-A) hovers a foot or so over the water a moment before it landed on the Housatonic River, Stratford, Conn., on Apr. 17. In this picture, just released, Igor Sikorsky, the designer and pilot, is shown making one of several landings and take-offs from the water. It is believed this is the first time a helicopter has operated from the water, or as an amphibian. Earlier, Mr. Sikorsky hovered over an area of less than an acre for 1 hour 5 minutes 14.5 seconds, after having made a true vertical take-off with no ground run or angular climb.

Where we stand in Aviation

In its relations with aviation, Goodyear occupies the same place it has long held in the automobile and motor truck industries—that of a major supplier of parts.

From the earliest days of the motorcar we have been manufacturers of tires, tubes, fan belts, radiator hose, motor mounts and numerous other rubber accessories — and of essential metal parts like rims designed out of our tire experience.

With equal faith in the future of aviation we began, *thirty years ago*, to apply our specialized knowledge of transport problems to the development of better products for all types of aircraft.

In close cooperation with the aviation industry we have perfected improved tires, tubes and other rubber needs — become large manufacturers of related accessories like wheels and brakes — acquired extensive facilities for handling alloy-metals used in aeronautical construction.

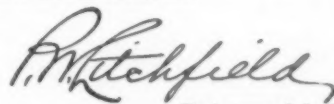
Through our subsidiary, Goodyear Aircraft Corporation, we are now making available to the aviation industry our long engineering experience in fabricating metal parts for aircraft.

Thus we are creating a mass-production source of supply for wings, nacelles, floats, tails and other control surfaces such as we are now building on subcontract for Glenn L. Martin Company, Consolidated Aircraft Corporation, Curtiss-Wright Corporation and Grumman Aircraft Engineering Corporation.

These facilities round out Goodyear's position as the nation's leading manu-

facturer of aviation tires, tubes, wheels, brakes and more than 30 other closely related rubber and metal parts.

We believe that our many notable contributions to aviation, including among numerous others the Airwheel and Hydraulic Disc Brake, are the best guarantee of our ability to serve the aircraft industry advantageously in the future as a primary supplier of highest quality parts and accessories.



Chairman of the Board
The Goodyear Tire & Rubber Company

GOOD YEAR

ON YOUR NEW SHIP SPECIFY GOODYEAR
AIRPLANE TIRES, TUBES, WHEELS AND BRAKES

Airwheel — T. M. The Goodyear Tire & Rubber Company

Army Plans Five New Giant Air Depots

Units to be Largest Of 11 in U. S. Plane Repair Network

CONSTRUCTION of five new Air Corps depots for overhauling airplanes and engines and providing landing space for planes was announced by War Dept. Apr. 22. The new depots when completed, at estimated cost of \$14,000,000 each, will be the largest of 11 in the Air Corps depot system in continental U. S.

Site for one at Oklahoma City, Okla., already has been approved and construction will start immediately. Exact location of the other four probably will not be determined for some time, at least until after the War Dept. decides where new training fields and bases for the expanding pilot training program are to be established.

Areas considered likely spots for the new depots, however, are central New York State, the Southeast, Northwest and Mid-West.

The new depots will supplement four large supply and repair units now in use at Middletown, Pa., Fairfield, O., San Antonio, Tex., and Sacramento, Cal., plus two under construction—at Mobile, Ala., and Ogden, Utah.

Indication that each of the network of depots will eventually be equipped with mobile units was given recently by Maj. Gen. G. H. Brett, chief of Air Corps, testifying before a Congressional subcommittee on national defense appropriations. At that time, Gen. Brett disclosed that mobile air units are being organized at each of the four depots in operation, since "we must have some sort of maintenance and supply force to go with the combat forces in case of any chance movement."

Mechanics for the mobile units would be trained in the permanent depot, but held as a separate organization so that when the combat force moves, the mobile depot could go along to perform its maintenance and repair work. Special equipment for repair operations in both arctic and tropical climates will be provided for the mobile units, being formed at unit cost of \$1,500,000.

The new Oklahoma City depot will be located five and a half miles east of the city on a 1,500 acre tract, near highway and rail facilities, as well as utilities. The depot will

employ about 3,500 civilians, and include 350 officers and enlisted men. Four runways will be built at the flying field operated in connection with the depot, one measuring 7,000 feet and the other three 6,000 feet. Plans and specifications call for salvage yards and facilities to provide complete overhaul of airplanes, engines, armament, radio, instruments and other aircraft accessories.

Airplanes, engines and parts which cannot be repaired in the field or at an Air Corps station are flown or transported by rail to a depot for repair or replacement of parts.

Size of the Oklahoma depot is indicated by its proposed capacity for engine repair, estimated at 3,600 engines a year, exceeding any single Air Corps station now in operation. Plans for the other four new depots are expected to conform generally to that for the Oklahoma City unit.

Bomber Plants

(Continued from page 1)

in Nebraska, Iowa, Colorado, and other midwestern states.

Officials were working overtime on estimates of the number of bombers which can be handled by the projected new facilities, in addition to the 3,600 bombers covered in the program for the four assembly plants under construction.

The automobile companies will participate in the augmented bomber production plan in the same way as in the first phase—as subcontractors making parts, subassemblies, and assemblies, with final assembly left to aircraft companies.

OPM officials believe adequate numbers of engines can be provided for the bomber program as Curtiss-Wright and Pratt & Whitney production steps up and Buick, Studebaker, Ford, and Packard swing into the engine picture. Lycoming is also ready to produce Wright engines and Continental's facilities for Wrights will soon be in full operation. Lycoming is also working on its own liquid-cooled type.

Reports from Detroit state Continental's prototype 1,500-hp. inline engine, weighing 1,420 lbs., has been testing for several weeks.

Buick Speeds Construction

Announcement of the award of more than \$600,000 in contracts covering the construction of test house, power house and personnel buildings for the aircraft engine plant of Buick Motor Division in the Chicago area was made recently by Harlow H. Curtice, president of Buick and vice president of General Motors Corp. This brings the total of awards to more than \$4,000,000, covering the contracts for steel construction and completion of the main manufacturing building. Curtice said.

Construction of the 1,000,000 sq. ft. engine plant, which will produce around 500 Pratt & Whitney 1,200-hp. engines a month, is progressing slightly ahead of schedule. Begun Mar. 17, work has been carried on day and night, Curtice declared.

Army-Navy Briefs

AIR CORPS needs more procurement inspectors for aircraft, engines, instruments, parachutes, propellers, tools and gages, radio, miscellaneous materials, textiles, fur-lined clothing and optical goods. U. S. Civil Service Commission has been unable to obtain enough inspectors through an examination recently offered, so applicants are now being rated on experience and education, with no written test required. Original appointments range in salaries from \$1620 to \$2600 a year.

THREE PRODUCTION bombers are undergoing the final "check and double check" at Air Corps' Materiel Division, Wright Field, Dayton, O.: North American's B-25, Martin's B-26, and Boeing's B-17D.

Accelerated service testing of Bell's YP-39C pursuit has just been completed by AC at Patterson Field. The new pursuit is an improvement on the Alracobra (P-39), though virtually the same in external appearance. It is powered with an Allison V-1710-35 liquid-cooled engine, which develops more hp. than the Allison used in the P-39.

Fleetwings' experimental basic trainer, XBT-12, which arrived at Wright Field recently will be turned over to AC for performance tests as soon as the factory pilot and mechanics complete trial flights and adjustments. The XBT-12 has spot-welded stainless steel fuselage. The XBT-12 was pictured in AMERICAN AVIATION for Feb. 15.

PARACHUTISTS in the Army and Marine Corps will become the highest-paid men of their rank in U. S. armed forces, since their risk is adjudged even greater than that of pilots. Officers are to receive \$100 and enlisted men \$50 a month additional pay for training as jumpers in the new branch of service. The Army has one parachute battalion on active duty at Ft. Benning, Ga., with three more to be organized by midsummer, while Marine jumpers are in training at Lakehurst, N. J. The Navy has no parachutists.

Tool Shipments Soar

Machine tool shipments in March totaled approximately \$57,400,000, compared with \$29,000,000 in Mar. 1940, a rise of 97.9 per cent. The National Machine Tool Builders Association reported recently. Feb. 1941 shipments were about \$54,000,000.

Building Spurred At Ford Plants

WITH CONSTRUCTION crews working overtime in an effort to catch up on schedules disrupted by labor difficulties in April, Ford Motor Co. has placed work at its \$21,000,000 Pratt & Whitney aircraft engine plant on a six-day week. At Ypsilanti, Mich., ground is being cleared for a plant to make parts for Consolidated B-24 bombers, and operations have already begun at the new \$1,000,000 River Rouge magnesium foundry, described as the world's largest unit of its type.

Meanwhile, C. E. Sorensen, Ford production chief, said recently that a complete 12-cylinder, V-type, liquid-cooled engine is expected to be ready for ground and flight trials by midsummer. Several pairs of test cylinders have been undergoing test-stand runs at Ford's Dearborn, Mich. laboratories for months.

"Studies conducted by our engineers and the test-cylinder runs already made indicate that the Ford engine will develop 1,800 hp. for take-off," Sorensen declared, adding that the company expected to rate the 1,600-lb. unit at only 1,500 hp. for regular operations.

Ford prepared plans to design and build its own aircraft engine after declining to produce the English Rolls-Royce Merlin, a project later undertaken by Packard.

Outstanding feature of the Ford engine will be the use of steel castings rather than forgings in many parts. By using castings, Ford engineers feel they can save time, machine tools, men and materials. They declare that the time required to make a rough casting and machine it to its final size is far less than in the case of forgings. Because the part can be cast more closely to the finished size, fewer machine tools and skilled operators will be needed.

Haven Page to Active Duty

Haven B. Page has resigned as general counsel of Private Fliers Association and as Washington attorney for Air Associates Inc., having been assigned to active duty in the Naval Reserve with the plans division of the Bureau of Aeronautics.

Bellanca YO-50 Being Tested



DESIGNED FOR SHORT-RANGE liaison flights, the Bellanca YO-50 is one of several liaison planes delivered to the Army Air Corps and is now undergoing flight tests at the plant of Bellanca Aircraft Corp., New Castle, Del. Foremost performance requirements of this type are low minimum flying speed, approaching the "hovering" speed of autogiros, and the ability to land in and take off from small spaces. Flaps and slots are utilized to meet these demands. The YO-50 is a high-wing, externally braced monoplane with provision for a crew of two. Its fuselage and control surfaces are fabric covered. Equipment includes a short-range command radio.

B-19 Test Pilots

Maj. Stanley Umstead, chief test pilot for the Army Air Corps, and O. W. "Bill" Coyle, test pilot for Douglas Aircraft Co., will handle controls of the 82-ton B-19 bomber on its initial take-off flight. The huge Douglas bomber is awaiting ground and skyway tests at Santa Monica (Cal.) Municipal Airport in the next few weeks.

Maj. Umstead ran performance tests on all the Army's big four-engine bombers, including the Flying Fortress.

Coyle for years was chief pilot of TWA's western division.



The Birdmen's Perch

We've always followed the rule that the reader's wish is our command. So—what would you fellows think about making the puzzles and problems on this page a little tougher? Let us know how you feel—and let us have what you consider tough problems, about aviation if possible. Thanks!

Major Al Williams, alias "Tattered Wing Tips,"
Gulf Aviation Products Manager, Gulf Bldg., Pittsburgh, Pa.

FUNNYBONER DEPT.

R. Ralph H. Lewis, down at Stetson University in DeLand, Fla., lets down his hair and tells this one on himself:

My instructor ordered me to take off and go up to three thousand feet. When we got to three thousand, he hollered into the one-way phone, "O.K., spin two turns to the right!"

That's when I began to worry, because I had never spun a plane in my life. And apparently the instructor had forgotten that he had never given me any instruction in spins. Then in a flash, I remembered a correspondence course I had taken several years ago, and I recalled what it said about how to do spins and recover.

So, with my heart gripped somewhat loosely between my teeth, I closed the throttle, eased back on the stick and kicked right rudder. Around and around we went! Finally I decided it was time to quit so I neutralized the controls and eased back on the stick. I then heard my instructor say in the 'phone, "That was good—you made a perfect two-turn spin and came out right on the nose!"

But when we landed and I told my instructor about his slight oversight, it was his turn to swallow his heart and grab a strut for support!



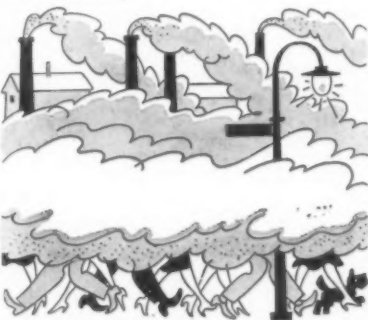
THIS MONTH'S BRAIN TWISTER

Five pilots owning very fast ships decided to determine the speed champion among them. If every pilot raced every other pilot, how many races would take place?

SMOKE WON'T GET IN YOUR EYES!

There used to be a time when St. Louis, Mo., was known as one of the smokiest, dirtiest cities in the country. On a rainy day, they had to keep the street lamps on at high noon, in order to see! But all that's changed now.

The City Fathers got together with some experts, and worked out new kinds of smokestacks and fuels that would eliminate the soot. And today, St. Louis is as bright and clean and dirt-free as any city in the country.



The extra trouble St. Louis went to, in eliminating dirt, reminds us of the Gulf engineers. For they weren't satisfied to leave "well enough" alone. They made it their business to apply a new, different process to make Gulfpride purer and freer from impurities. This Alchlor Process, as we call it, actually eliminates up to 20% more of the carbon and sludge formers that can make the operation of an engine costly and inefficient.

That's why you'll find smart pilots, both amateur and professional, protecting their motors with Gulfpride—the oil that's been "cleaned up" to give you longer engine life and better all-round operation.

THIS MONTH'S WHOPPER

Dear Major,

I have a number of racing pigeons and every week I have them released at various points ranging from 250 to 300 miles away from their loft. Well, a short time ago these pigeons were released from an airport in Virginia and all but one took off and circled in the conventional manner. But this bird decided to have a drink before starting for the loft and walked over to the bucket used by the mechanics for washing the grease off the airplane parts.



The homing pigeon drank some of this "water" spiked with G.A.G., and with a sound resembling a rocket, took off—but in the wrong direction! I thought I would never see this bird again, but when I got back to the loft, I found that all the pigeons had returned, and was amazed to learn that the one that had drunk the G.A.G. had got back first!

I investigated further and learned that this bird had been seen out over the Atlantic Ocean, had almost been shot down over Europe, was once sighted over Australia, and then was not seen again until he returned to the U.S.

I am now training all my birds on G.A.G., but find it so strong for man, bird, or 'plane that I have to dilute it with 10,000 parts of water!

"The Flying Dutchman"
Duncannon, Pa.



Gulf Oil Corporation and Gulf Refining Company... makers of



**GULF
AVIATION
PRODUCTS**

New War Dept. Plan Would Use CPTP Schools for Ground Training of Cadets

Revision of CAA's Unit Expected Shortly to Meet Need for Closer Coordination with Military

REVISION of the CAA's Civilian Pilot Training Program to effect closer coordination with the military services is expected shortly, as the Army Air Corps' plan to expand its pilot training rate to 30,000 a year gains momentum.

Although War Dept. officials are reluctant to discuss details of the imminent wide-spread expansion of training facilities until plans have crystallized, it has been disclosed that strong consideration is being given to a plan that would restrict use of some CPTP schools to "pre-primary" ground training of cadets.

Under the projected arrangement, military students would be sent to CPTP schools immediately upon their enlistment in the Air Corps. These schools, serving as aviation reception centers, would give the cadets four weeks' training in ground school courses, drill and athletics, while actual flight training would be delayed until the students enter primary schools.

The pre-primary CPTP course will take over most of the study of military law, air navigation, mathematics and possibly other subjects now taught at the primary and basic schools, relieving the student for concentration on flight training later. Thus he would be well grounded in fundamental information prior to initiation in actual flying.

Basic school courses will be considerably altered accordingly, and will be augmented to include instruction in both cross-country and formation flying, reportedly six hours of each in AT-6 advanced trainers and BC-1 basic combat planes. Hitherto, these phases of flight have been started only after graduation from the basic course.

It is likely that many CPTP secondary schools will operate under Army contracts as military primary training schools, while some CPTP primary units will continue civil training, others being enlarged and incorporated into the arrangement already described. Those offering military pre-primary training would continue under CAA direction, conforming however to Army specifica-

tions. Thus CPTP primary schools would feed students into CPTP secondary schools which in turn serve as primary schools for military flight training.

The War Dept. is continuing a policy of strict silence concerning the location of new civilian flying schools to avoid pressure from political and other sources in site selection, as well as to forestall unfavorable local developments such as increased real estate prices. Three Army boards, one from each of the three aviation centers, are in the field surveying potential sites. The number of elementary civilian flying school contractors participating in the training program is expected to be nearly doubled from present total of 28.

Locations of the first two military flight schools to be formed as part of the expanded pilot training program were revealed May 7, when it was announced that an advanced training school would be constructed at Dothan, Ala., and a flexible gunnery school at Harlingen, Tex. The Dothan school, where flying cadets will receive instruction in handling single-engine trainers, will cost about \$3,100,000 and provide facilities for 190 officers, 350 cadets and 2,000 enlisted men. The Harlingen school will be slightly larger, costing an estimated \$3,800,000.

New Kollsman Unit Has

Non-Magnetic Structure

A specially-constructed non-magnetic building for magnetic compass assembly and adjustment now occupies part of the plant addition recently completed for Kollsman Instrument Division of Square D Co., Elmhurst, N. Y.

The addition, together with other supplementary plant divisions being put into operation at Long Island City and Woodside, N. Y., will represent an increase of almost 100 per cent in available plant capacity within the past six months.

Advertising Account Placed

Advertising account of Electronic Laboratories Inc., Indianapolis, Ind., has been placed with Sidener & Van Riper Inc., Indianapolis.

OPM Outlines

(Continued from page 1)

airframe and assembly plants has six specifications:

1. Substantial amount of space, or a minimum of 200 acres, must be available with level terrain in a region where flying activities may be carried on almost continuously. Proximity to an established airfield suitable for the type of planes to be produced is described as "highly desirable."

2. The plant should be near the source of aircraft accessories, principal materials and component parts, including engines, propellers and instruments. Vital metals should be readily accessible, principally the non-ferrous variety.

3. There should be ample rail transportation connecting with at least two independent rail systems, and good roads to accommodate the heavy trucks and passenger traffic incident to aircraft production.

4. Labor supply of between 10,000 and 17,000 skilled and semi-skilled workers should exist within a radius of 25 miles.

5. There should be power, water and fuel sufficient for utility purposes.

6. Subsidiary facilities in the vicinity should include metal working, die, gage and tool making, and

Canadian Visitor



AIR MARSHAL William A. Bishop of the Royal Canadian Air Force (left) with Maj. C. C. Moseley, president of C-W Tech and of Cal Aero Academy. During his visit to C-W Tech, "Billy" Bishop observed how the school trains over 2,000 civilian and Army students of aeronautical engineering and master aviation mechanics. The Air Marshal visited various aeronautical centers in southern California, including the Vultee Aircraft plant.

similar industries relied upon by aircraft manufacturers.

Lockheed Develops Process to Speed Template Copying

A new aid to speedier mass production of aircraft, an electrolytic transfer process by which work templates can be reproduced in five minutes, has been developed in the Lockheed laboratories, Burbank, Cal., and is being made available to the industry, according to a recent announcement by R. A. Von Hake, vice president in charge of manufacturing.

Total cost of template layout copying by the new method, including labor and materials, is said to be less than 10 cents a sq. ft. of layout area, as contrasted with costs ranging as high as 60 cents a sq. ft. by the photo-loft-template process and \$1.00 a sq. ft. by hand.

Polish Plane Designer Now in Canada Surveying Molded Plywood for Govt.

W. J. JAKIMIUK, chief designer of the De Havilland Aircraft of Canada, Ltd., Toronto, is currently surveying the U. S. aircraft industry with a view to production of molded plywood airplanes in Canada. One of Europe's foremost designers before the war, Jakimiuk believes the various new molded plywood processes developed in the U. S. may open up a new field of production for Canada.

A fuselage embodying the principal characteristics of the twin-engined Avro Anson, now used in quantity for training in Canada, has been undergoing tests at the U. S. Plywood Corp. plant, New Rochelle, N. Y., which has a license for the Eugene Vidal process. Bristol Aircraft Division of Monocoupe Aeroplane & Engine Corp., Bristol, Va., is currently building molded plywood parts for Avro Ansons as part of the Canadian program.

Jakimiuk is also studying the Timm Aircraft and Duramold molded plywood processes and believes both single-engined and twin-engined planes can be built successfully in Canada by using one of these methods.

The noted designer went to Canada from the U. S. shortly after he arrived here by boat from Lisbon after the fall of France last year. As chief designer of the National Aircraft factory of Poland in the '30's, he designed a gull-wing single-seater fighter well known throughout Europe and especially in the Balkans.

This PLZ fighter had a top speed of 265 mph., was powered with a 950-hp. French engine, carried two 20-mm. cannon, several machine guns, and two 110-lb. bombs for dive bombing.

It was the fastest single-seater fighter in Europe for some years and was one of the planes used by the Greeks in the unsuccessful defense of their country recently. Poland entered one of the early models in the National Air Races at Cleveland in 1932 at which time it outstripped all competitors in a climb contest.

Jakimiuk also has designed a single-engined low-wing pursuit, and a twin-engined 14-passenger transport embodying some of the major characteristics of the Douglas DC-3 and the Lockheed 14. One of these transports had been built before Germany invaded Poland and five more were under construction. The factory was destroyed. Jakimiuk escaped from Poland to Roumania and thence through Italy to France where he aided the French aircraft industry for six months prior to the fall of that country.

The Canadian De Havilland factory is completing its expansion program which will involve increase of employees to 3,000. It has been building British Moth trainers and assembling Avro Ansons. Whatever molded plywood work will be undertaken by the Canadian government will probably be centered in the De Havilland plant, at least through the experimental stages.

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Bulwark OF AMERICA'S DEFENSE



THIS TOWER OVERLOOKS AVIATION'S MOST DISTINGUISHED SCHOOL OF AERONAUTICS • FOUNDED IN 1929

The backbone of America's defense is the training of the men who will design, build and maintain the planes that **MUST** give the United States complete mastery of the skies! Upon this training our future depends. Curtiss-Wright Technical Institute, under the personal supervision of Major C. C. Moseley, President and sole owner, is America's most distinguished school specializing in the training of Aeronautical Engineers and Master Aviation Mechanics. And its accumulated experience of many years in technical aeronautical instruction supplies the aviation industry with thoroughly

Qualified graduates and is now being utilized in the National Defense Program by the U. S. Army Air Corps in the training of hundreds of enlisted men as Air Corps mechanics. Curtiss-Wright Ted's flying school, the Aero Academy, is extending Primary and Basic training

to thousands of Army Flying Cadets at three great training fields of its own in Southern California. With vastly increased plant and facilities, Curtiss-Wright Tec is now training 2,044 students, of whom 605 are Army enlisted men and is prepared to expand to approximately 3,000 students if necessary in the interests of national defense.



GRAND CENTRAL AIR TERMINAL
GLENDALE (LOS ANGELES) CALIF.

CONTRACTORS TO THE
U. S. Army Air Corps

Air Corps Begins Tests on Its 1st 2000-HP Fighter Plane 8 Months After Contract Date

Republic Aviation's Thunderbolt Called Fastest in its Class

THE WAR DEPT. announced May 7 that the Air Corps materiel division has begun tests on the Republic XP-47B "Thunderbolt," the first 2,000-hp. single-engined fighter plane to be produced for the U. S. Army.

Engineered and constructed in record-breaking time, the "Thunderbolt" is the forerunner of a large number of similar planes to be manufactured by Republic Aviation Corp., Farmingdale, N. Y. The first plane has been test flown and is now at an Air Corps field where further studies are under way.

Ralph S. Damon, newly-elected president of Republic, said "the production of the XP-47B 'Thunderbolt' brings to the Army Air Corps its first super-powered interceptor airplane and is the first to utilize the highest-powered engine available to aircraft manufacturers today." He said no credit could go to himself since he had just joined the company, and warmly praised W. Wallace Kellett, now Republic's board chairman, and the Republic

organization, for its contribution to national defense.

Contract for the 'Thunderbolt' was signed on Sept. 6, 1940, and the airplane flew on May 6, 1941, eight months to the day when the plane was ordered by the government.

Designed by Alexander Kartveli, Republic chief engineer, who also designed the 'Guardian' dive bomber and the P-43 'Lancer' pursuit now in full-scale production, the 'Thunderbolt' "is likely to be the finest pursuit plane produced anywhere in the world during 1941," Damon said.

Only data released by the War Department states that the single-place interceptor has a four-blade propeller, is powered by a Pratt & Whitney radial 14-cylinder engine developing 2000 hp., is of all-metal construction, and is comparable in weight to the Lockheed P-38 although slightly smaller in over-all dimensions.

"For combat conditions, the new airplane will be heavily armored and have strong firepower from large and small caliber guns," the announcement said. The interceptor is also said to have an exceptionally high service ceiling.

• • •

Fast North American NA-73 Rated Over 400 MPH.

The single-seat pursuit plane designated by the Army Air Corps as XP-51 and by the British as the NA-73 'Mustang,' was disclosed as having a top speed of over 400 mph. following inspection recently by Merrill C. Meigs, chief of the aircraft section of OPM.

J. H. Kindelberger, president of North American Aviation Inc., told a stockholders meeting late in April that production of the Allison-powered NA-73 fighter is on schedule but that deliveries are behind because of shortages of engines. Kindelberger said the NA-73 "has both a lower landing speed and a higher top speed than had been estimated. The only ship in the world of the same type which is faster is a British ship which is not yet in production but which uses 65% more power."

RFC Loans Authorized for Beech, Lawrance & Erco

Loans totaling \$1,000,000 have been authorized for Beech Aircraft Corp., Wichita, Kan., Lawrance Engineering & Research Corp., Linden, N. J., and Engineering & Research Corp., Riverdale, Md., according to RFC report for January.

Beech was authorized by RFC to borrow \$650,000, with interest rate of 4%, canceling earlier authorization of \$400,000.

Approval was given Lawrance to borrow \$250,000 at 5% rate through Mar. 31, 1942, and at 4% thereafter upon firm's compliance with certain conditions.

Erco was authorized to borrow \$100,000 from RFC at same interest terms as Lawrance.

Instrument Firm Organized

Atlantic Instrument & Tool Co. Inc., 418 Broome St., New York, N. Y., was recently organized for the manufacture of precision measuring instruments, adjustable snap gages and other tools.

'Labor Stealing'

"Labor stealing" in the aircraft industry has assumed such proportions that legislation may be needed to stop it, according to Charles S. Mattoon, personnel director of Curtiss-Wright Airplane Division, Buffalo, N. Y.

"As the shortage of skilled men becomes more acute," he said, "some plants think the way out is to woo men away from other plants. The trouble is that it does neither the industry nor the individual plant any good."

Vultee Dedicates Nashville Plant, Prepares for Output of Dive Bombers

ON THE EVE of the dedication of the new Nashville plant of Vultee Aircraft Inc. on May 4, announcement was made by Richard W. Millar, Vultee president, that the plant would be used for production of 'Vengeance' dive bombers for Great Britain and that production of the first plane was already under way on the west coast.

A British spokesman described the 'Vengeance' as "a weapon of retaliation with performance better than even the most modern of its type," and is generally reported to have a far greater flying range and carrying power than the famed German Stuka dive bomber which has a range of 500 miles.

Millar also announced that the 'Vengeance' is being manufactured under license in quantity by Northrop Aircraft Inc.

Bombs are carried internally and landing gear is retractable to reduce the drag and permit greater speed. The plane is powered with a Wright Cyclone engine. Company officials "make the unqualified statement that the 'Vengeance' outperforms any known plane of similar type in the world today," the release said. "In addition, the most modern protection devices and armament have been installed."

Contract for a large quantity of the bombers was signed just 10 months ago by the British on the basis of preliminary studies and specifications. Deliveries of the completed planes in large quantity are "only a short time away," officials said.

Spencer Jennings, Vultee performance pilot, put a 'Vengeance' through demonstration maneuvers over Nashville following the plant dedication.

Vultee's plant embraces the original Stinson plant which was opened last year, plus a 970 x 700-ft. addition, presenting one of the most impressive factories in the industry. The building just dedicated has 800,000 square feet of floor space, or 18½ acres, with 195,000 square feet of glass area. It is located adjacent

Willkie Flies

Wendell Willkie, chief speaker at the Vultee plant dedication at Nashville May 4, was flown over the crowd of 15,000 persons in a new 0-49 Observation plane being manufactured in the plant. Cy Younglove was pilot. Willkie apparently enjoyed his trip and kept up a steady stream of conversation by radio which was relayed to the crowd by loudspeakers. The 0-49 flies as slow as 30 mph. and climbs sharply.

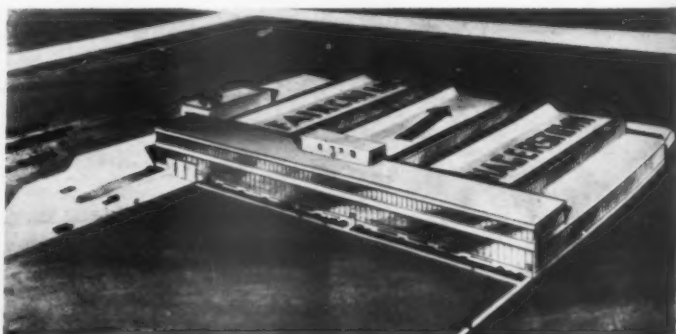
to Nashville Municipal Airport east of the city.

Production of 0-49 Observation plane developed by the Stinson division will continue. It will be some weeks before full-scale dive bomber production can get underway at Nashville, but subcontracting of parts is already well advanced.

Chief speakers at the ceremonies were Wendell L. Willkie, Republican candidate for President, and Sir Henry Self, director general of the British Air Commission. Others participating were: Millar, Harry Woodhead, president of Aviation Manufacturing Corp.; and Representative James Percy Priest. Among guests were Victor Emanuel of Aviation Corp., C. R. Smith, president of American Airlines, and a number of manufacturers.

Harvey Tafe, manager of the Nashville plant, was local host. Assisting were T. C. Sullivan, secretary of Vultee, and Jack Bailhe, in charge of publicity at Nashville. Leon Shloss, of the Aeronautical Chamber of Commerce, was in charge of a group of newspapermen from New York and Washington who were flown to the city by chartered American Airlines planes. Silliman Evans, publisher of the Nashville Tennessean, took a leading part in the occasion. His newspaper published a special 206-page edition featuring aviation and the new plant.

Ready in June



NEW FACTORY OF FAIRCHILD Engine & Airplane Corp. at improved Municipal Airport, Hagerstown, Md., made necessary by Army and other demands for the Fairchild PT-19 trainer, will be completed in June. Company has also had to lease the exhibit hall at Hagerstown Fair Grounds and other buildings in and around the city for production of this plane, for the Fairchild 24, for sub-contract work in metal wings and other parts for Martin bombers and for production of parts and experimental work in Duramold. Fairchild's original plant at Hagerstown was pictured in AMERICAN AVIATION for Mar. 1.

Aero ITI-Trained Men Are

Upgraded IN ADVANCE



In pictures phases of instruction not ordinarily found or covered thoroughly, private aircraft school courses these photographs indicate how thorough and extensive is the training given by Aero ITI to supply the industry with better qualified personnel.

Personal department executives—and all other executives concerned with engine production—can employ the Aero ITI-trained men assured of his up-to-date knowledge being well along. This continues to be demonstrated time and again by the many graduates of this school already secured, established in the industry. It is the rule that five Aero ITI-trained men soon demonstrate ability beyond his present job. Numerous are the cases of early transfer and advancement to junior inspection, power plant installation, instrument installation, experimental work, and even such highly specialized work as time and motion study. Men so trained are being requested of this school in far greater numbers than possible to supply... but Aero ITI looks ahead with the industry to building the nucleus of supervisory personnel needed in the still greater future ahead.

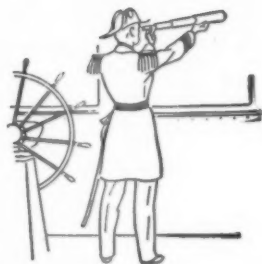
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The Admiral who can see 500 miles



IT'S ALL PART of his day's work . . . to see and know what's happening hundreds of miles away. And Grumman makes it possible for him to do so.

For the air arm of the United States Navy has a fleet of swift Grumman Fighters which it can unleash at a moment's notice. And—in short order—the information needed to protect our shores from any threat is obtained *first hand!*

Helping Grumman build first-line planes like the bullet-nosed fighter shown here is a service of which B. F. Goodrich has long been proud. For Grumman equips its planes with B. F. Goodrich Silvertown Tires.

When our Navy pilots take off or land, these tires, which were specially designed by B. F. Goodrich for this type of service, increase both control and safety—two factors especially important when "the field" is the deck of a pitching aircraft carrier.

There are more than 50 Goodrich products now in use by the aviation industry, on planes of all types. Famous Goodrich De-Icers are another important contribution to flight-safety. If you'd like the facts about any B. F. Goodrich aviation product, write air mail to B. F. Goodrich Company, Aeronautical Division, Akron, Ohio.

IT PAYS TO **FLY**



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OVER 50 RUBBER PRODUCTS FOR AIRPLANES INCLUDING TIRES • TAIL WHEELS • ABRASION SHOES • DE-ICERS • MATTING • RUBBER HOSE • GROMMETS • SHOCK ABSORBER COR

Army and Navy Approval Necessary on All New Airline Routes, CAB Announces

Certificates to be Conditioned on Availability Of \$360,000 RFC Loan Material, Personnel; Board will Continue Hearings on Applications

ALL NEW airline route certificates issued by the Civil Aeronautics Board "will be covered by a condition that such certificates will become effective for operations when the Board is advised by the War and Navy Departments that their national defense requirements for aviation material and personnel no longer necessitate deferment of the inauguration of the service authorized by the certificate," CAB announced on Apr. 24.

This policy, CAB said, was arrived at "following consultation with the War and Navy Departments."

In reality, outside of putting the policy formally on the record, the CAB announcement makes little change in the situation, because prior to Apr. 24 the airlines, through the priorities system, could get only a limited number of planes, the amount depending upon demand of the military services.

"The present emergency in national defense production has extended the category of cases involving questions of national defense to embrace all applications requiring additional aircraft material or personnel," CAB said. "This condition has for some time past been receiving careful study by the Board in close collaboration with the War and Navy Departments."

"The restriction of the certificates is made necessary by the defense needs which require a limitation of the number of planes available for new transport services. The manufacturing resources of the country are being concentrated upon the production of planes for military use."

New Stops Unaffected

"The restriction which is to apply to new route certificates or amendments to existing certificates providing for extensions of service will not apply in cases which involve only an additional intermediate point on a route and do not, therefore, require additional flight equipment."

"Under the Civil Aeronautics Act of 1938 the Civil Aeronautics Board is required to give due consideration to the development of an air transportation system properly adapted to the present and future needs of the national defense. Accordingly, the Board, in passing upon applications . . . for new routes, has pursued the policy of obtaining the judgment of the War and Navy Departments on the national defense questions involved."

"There are pending before the Board more than 100 applications for new route certificates. It is the policy of the Board to have hearings on these applications in the order in which the applications were filed. The Board will continue to hold these hearings as rapidly as possible."

"The Board feels, in common with other branches of the government,

that in the present emergency all actions and policies must be governed primarily by the requirements of the national defense."

Covers All Applications

The CAB policy affects all new route applications on which final decisions have not been issued, instead of only those on which hearings have not been held, as was the first impression in some quarters.

It is understood that in extensive meetings over the past few months, the War Dept. has sought to persuade CAB to discontinue entirely any further consideration of new route applications at this time—complete stoppage of new route hearings and abandonment of all new route programs by the airlines. CAB is said to have consistently blocked this proposal, feeling that it is important to the economics and development of the airlines to continue with new route hearings down to the granting of certificates so that the airlines might know where they stand when the emergency ceases.

\$360,000 RFC Loan

Sought by CCA Inc.

CANADIAN COLONIAL Airways Inc. has filed application with the Reconstruction Finance Corp. for a \$360,000 loan, offering as collateral five DC-3's and one Howard.

According to a copy of the application filed with CAB, the money will be used as follows: for a new DC-3, \$115,565; payment of loan from Manufacturers Trust Co., New York, \$82,000; payment of loan from Ladenburg, Thalmann & Co., New York, \$120,000, and payment of trade accounts, \$42,435.

The company proposes to repay the loan in 48 equal monthly installments of \$7,500 each.

NWA Moves Offices

Northwest Airlines has moved its general traffic offices into the new administration building at St. Paul Municipal Airport.

Study Airport Tube Plan

The plan for a high-speed subway from the Chicago Loop to the municipal airport received impetus this month when the city announced that it would provide funds not to exceed \$5,000 for a preliminary study of the feasibility of the project formulated by Joshua D'Esposito, well-known engineer.

The proposed subway would cost between \$7,000,000 and \$8,000,000 and provide 10-minute service between the airport and the Loop.

Temporary NY-Nassau Permit Asked by CCA

A TEMPORARY certificate covering a New York-Nassau route with stops at Norfolk, Wilmington and Charleston, with Atlantic City, Elizabeth City, New Bern, Myrtle Beach and Georgetown as flag stops, was sought by Canadian Colonial Airways Inc. in application filed with CAB Apr. 23.

On July 1, 1940, the company sought a permanent certificate covering this route, except New Bern. It states that the permanent application probably cannot be decided until well into 1942, and that since filing it, the cities along the route "have become focal points in the national defense program . . . Norfolk, Wilmington, Elizabeth City, New Bern and Charleston have become heavy concentration points for both civil construction personnel and personnel of the Army, Navy, Marine Corps and Coast Guard."

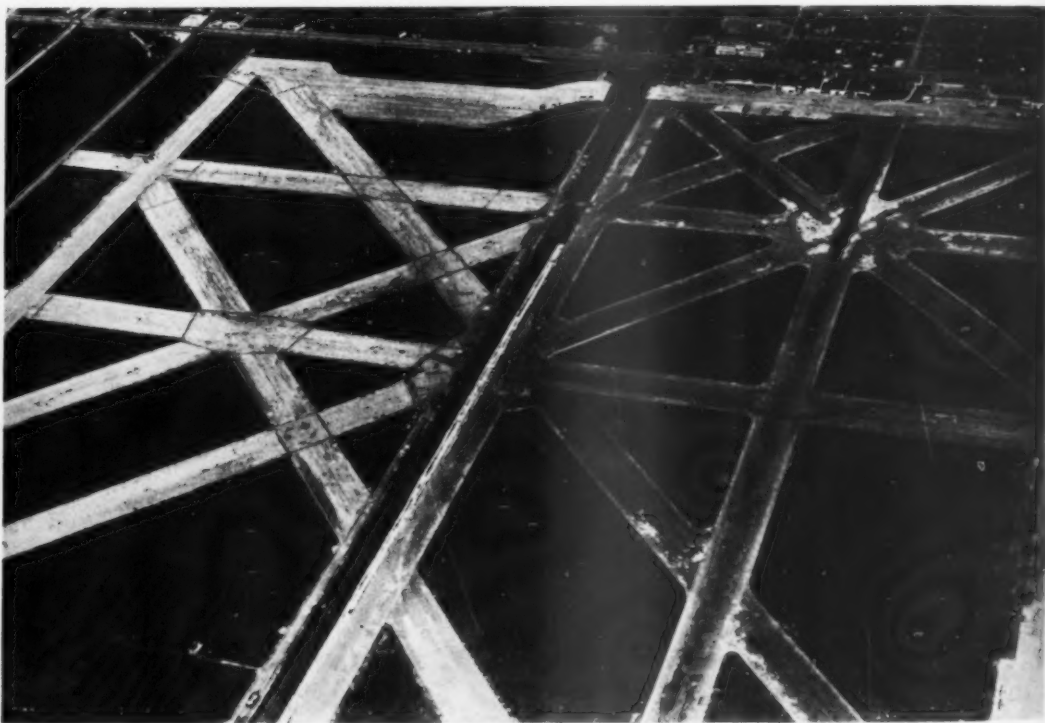
"There is an urgent need for immediate passenger, mail and express air service to and between the cities named," CCA estimates that in the first year of operations its loss on the route, excluding mail pay, would be \$178,740.

EAL Asks 3 Routes Totaling 1,499 Miles

THREE NEW mail-passenger-property routes covering 1,499 miles were sought by Eastern Air Lines in applications filed with the CAB on April 29.

Routes sought are (1) 649-mile Memphis-Detroit via Paducah, Evansville (Terre Haute optional), Indianapolis (Anderson-Muncie optional), Ft. Wayne and Toledo; (2) 714-mile New Orleans-Miami via Tampa and West Palm Beach, and (3) 136-mile Miami-Key West.

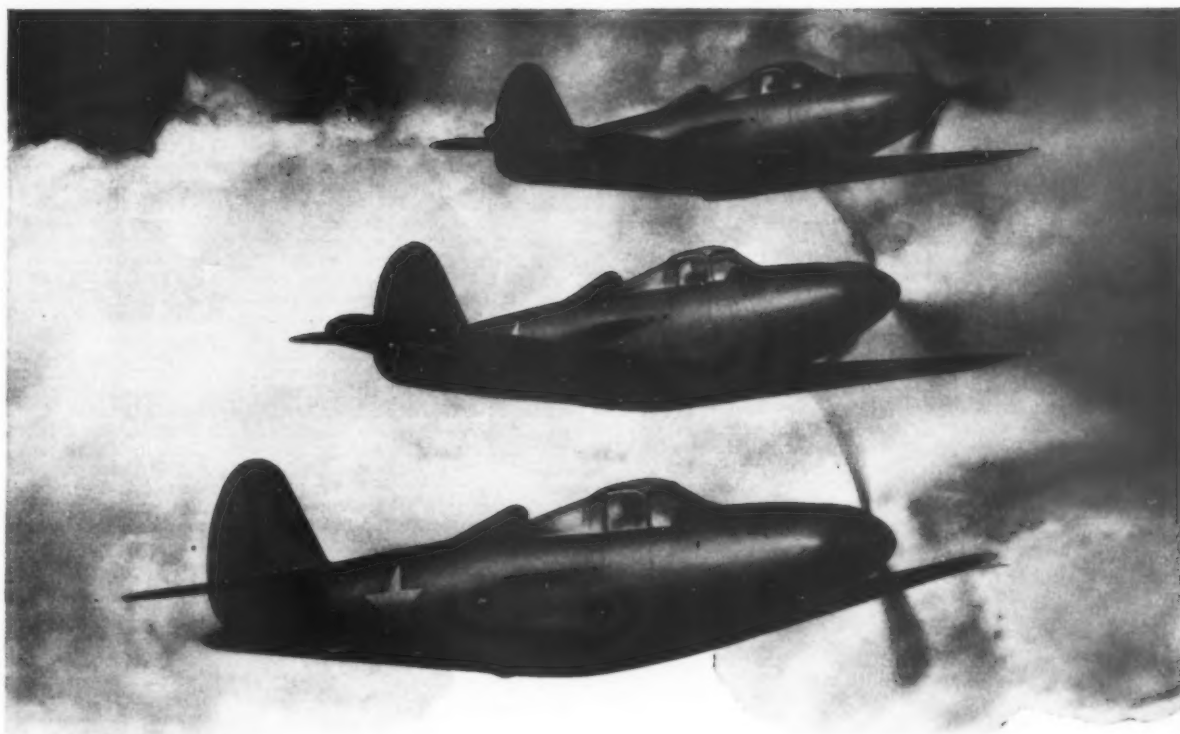
A Mirage? Chicago Airport Loses Its Railroad



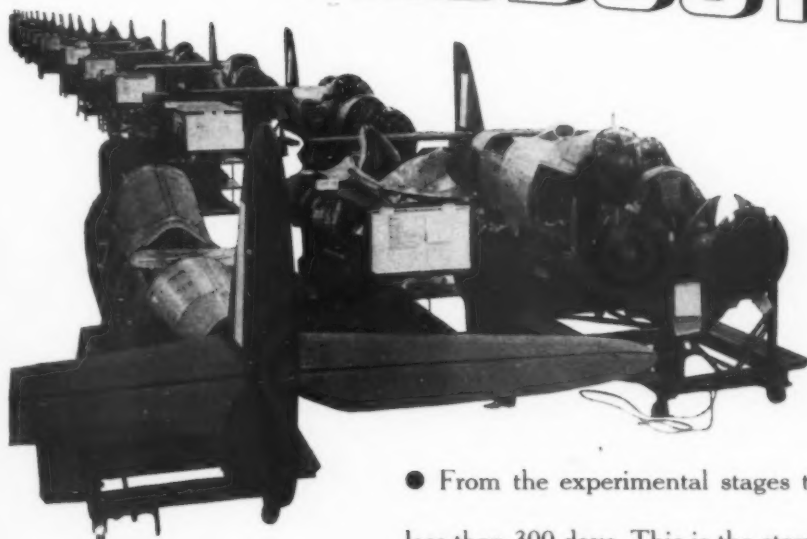
After waiting for five years, and after several false starts, Chicago Municipal Airport will be cleared of the doubletrack railway which has bisected the field as shown above. On May 1, new railroad right-of-way to the far north of the airport was put into operation, and work to remove the old tracks began with a ceremony staged by the city, the Chicago & Western Indiana R. R., the Chicago Association of Commerce, the Air Transport Association,

and five airlines—American, Eastern, Pennsylvania Central, TWA, and United.

The improved airport will have the longest and most paved runways in the world, it is said, totaling 243.6 acres, or 12.1 miles. Longest runway will be 6,480 by 175 ft.; one runway will be 300 ft. wide, and none will be less than 4,500 ft. long. A new terminal building also is planned.



PRODUCTION !



● From the experimental stages to mass production in less than 300 days. This is the story of the Airacobra; the U. S. Army's potent, cannon carrying fighter airplane.



BELL AIRCRAFT CORPORATION, BUFFALO, NEW YORK

3 U.S.-Canada Lines Established as TCA Gets NY Route, AA Buffalo-Toronto, Windsor Link

United Awarded Mail on Seattle-Vancouver; American to Serve Niagara Falls on AM7; Northwest's Chicago-NY Application Denied

THREE NEW links between the U. S. and Canada were established Apr. 25 when the Civil Aeronautics Board announced the award of a foreign air carrier permit to Trans-Canada Air Lines for a New York-Toronto non-stop, gave American Airlines a certificate for Buffalo-Toronto, and also awarded American a stop at Windsor on AM7, New York-Chicago. President Roosevelt approved the decision Apr. 25.

Among applications denied were Trans-Canada's Buffalo-Toronto, Pennsylvania-Central's Buffalo-Toronto, Northwest's Chicago-New York, and American's and Canadian Colonial's New York-Toronto.

In addition to Windsor, American will serve Niagara Falls as an intermediate stop on AM7.

The Board also stated that United Air Lines will be permitted to transport mail, as well as passengers and property, between Seattle and Vancouver.

Inauguration of New York-Toronto service by TCA "would connect the chief financial and industrial city of Canada with New York," CAB said. The service would afford a large sav-

ing in time and mileage over present rail service between the cities "and would also result in a considerable saving over the combined rail and air service now available via Buffalo and the air service via Montreal," it added.

CAB noted that U. S. air carriers had insisted that a reciprocal service should be established between New York and Toronto by a U. S. line. The Board said, however, that under the agreement between the two countries "the conditions which motivated the position of the interveners no longer exist."

After finding Buffalo-Toronto in the public interest, CAB selected American over PCA because the record supports "the conclusion that the greater movement of traffic between Buffalo and Toronto is traffic originating or destined to points beyond Buffalo and that a major portion of such traffic is to and from New York."

Close Chicago-Toronto Gap

A stop by American at Windsor on AM7 "will close a gap in air transportation between Chicago and Toronto," CAB said. American will connect at Windsor with TCA's Toronto-Windsor route.

A service by Canadian Colonial between New York and Toronto via Scranton, Elmira, Buffalo, and Niagara Falls would require heavy mail pay to enable the carrier to break even, the decision said, adding that the record failed to denote any degree of inadequacy in service on American's AM7.

"The record does not indicate the need of two services between New York and Buffalo, nor does it furnish any reason to doubt that American is in as good position to render service to Scranton as Canadian Colonial would be if it were awarded the certificate," it stated.

Regarding CCA's contention that its proposed operation would prevent one carrier from dominating the Buffalo-New York field, CAB said AM7 is not inadequate and that there is no reason to believe that AA cannot accommodate "the natural growth of air traffic which can be foreseen at this time." These conditions make CCA's contention "unimpressive," it added.

In deciding the important question of whether to award Northwest a Chicago-New York route, thus creating a fourth transcontinental line, the Board said: "The existing carriers can take care of the existing traffic with a surplus of space still available. As in the past when traffic increases warrant the inauguration of additional flights, the existing airlines may be expected to inaugurate such flights when the income from the traffic at least equals the out-of-pocket expense of these flights. Such additional flights should not, therefore cost the government anything. The proposal of Northwest . . . would, on the other hand, cost the government over the next year al-

most \$400,000 and similar substantial sums thereafter.

Suggest Equipment Interchange

"As the through traffic between the Twin Cities and points west thereof on the one hand and New York City on the other increases, it may appear increasingly desirable to avoid the inconvenience of changing planes at Chicago. The Board must take cognizance of the fact, however, that such inconvenience might at any time be obviated at no expense to the taxpayers by interchange of equipment at Chicago between Northwest . . . and either Transcontinental & Western Air or American Airlines.

"Furthermore, at some time in the future it is possible that substantial further development of traffic might indicate the need for additional air transportation between Minneapolis-St. Paul and the east which would warrant service over a more direct route than by way of Chicago, as presently proposed."

TCA Gives New York Fastest Air Service to Vancouver, B. C.

DIRECT NONSTOP air service between New York and Toronto was inaugurated May 10 by Trans-Canada Air Lines, opening a 17-hour transcontinental service from New York to Vancouver, B. C., some five hours less than routings via U. S. airlines.

Two round trips daily are operated between New York and Toronto with Lockheed Lodestars, the schedules allowing 2 hrs. 15 min. for the 370-mile trip northbound and 2 hrs. flat southbound.

TCA planes are being serviced by American Airlines in New York, while American's equipment will be similarly handled in Toronto by TCA when the U. S. carrier opens its recently awarded Buffalo-Toronto extension.

In need of more available seats to provide for increasing traffic, TCA is planning to convert its 10-passenger Lockheed 14 planes into 14-passenger Lodestars. The first Lockheed 14 is now undergoing enlargement at the company's maintenance base in Winnipeg. TCA operates 22 planes in all, including 14 Lockheed 14's, 6 Lodestars and 2 Electras.

MAIL PICKUP VIEWED

Town Officials See Demonstration At Recent Wichita Aviation Week Activities

Demonstration of airmail pickup were presented on three successive days during the Southwest Aviation Conference and Wichita Aviation Week last month. Among spectators were many town officials invited to Wichita to consult with executives of feeder airline routes contemplating operations in the southwest.

The demonstrations were sponsored by Automatic Air Mail Inc., Lost Nation, Ia.; All American Aviation Inc., Wilmington, Del., and Mercury Development Corp., Indianapolis, Ind.

Stevens Leaves PAA

Harold Burr Stevens has terminated relationship with Pan American Airways' Atlantic division as traffic representative and is now ground supervisor of the Civilian Pilot Training Program for western Pennsylvania with headquarters at Allegheny County Municipal Airport, Pittsburgh.

S.J.SOLOMON NAMED PRESIDENT OF NEA

Paul Collins Resigns as Head of Airline, Becomes Chairman of Board

SAMUEL J. SOLOMON, of Washington, D. C., was elected president of Northeast Airlines on May 7, succeeding Paul F. Collins who resigned because of ill health. Collins was elected chairman of the board.

Solomon has been connected with the airline as vice-president since it began operations as Boston-Maine Airways in 1933. He is also vice-president of National Airport Corp. and manager of the present Washington airport. He will continue in these capacities pending completion of Washington National Airport.

As president of Northeast, Solomon will make his headquarters at East Boston Airport.

Born in Washington July 11, 1890, he was educated in Washington public schools and Central High School and was about to commence a four-year scholarship at Lafayette College when the war changed his plans. After the war he entered the service of the Treasury Dept. When he resigned in 1923 to enter the real estate and building business, he was head of a unit in the Liberty Loan division of the Treasury.

Solomon was admitted to practice before the Interstate Commerce Commission in Feb., 1936 to represent Boston-Maine and National Airways in air mail rate cases. He was later graduated from National University Law School and was admitted to the practice of law in Apr., 1937.

He has been actively engaged in aviation activities since 1933 when he, Collins and the late Amelia Earhart formed National Airways to perform operations for Boston-Maine Airways, the latter having been organized by the Boston & Maine Railroad and the Maine Central Railroad.

Solomon's home is in Silver Spring, Md. He is married and has three sons.

Collins, who has been president of the line since its inception, has been considering resignation for some time because of his health, it is said, and finally decided to cease active work as head of the company.

New UAL Office



UNITED AIR LINES' new \$30,000 Los Angeles office occupies space on the first two floors of the Pacific Mutual Building at Sixth and Olive Sts. On the first floor are a reception area and ticket counters, each backed by a mural; a lounge section for waiting passengers and a new-type luggage compartment. The three murals show a map of the U. S. with all airlines, life and industry in Pacific northwest, and life and industry in the east. On the second floor are passenger sales, express-mail-freight, publicity and public relations offices as well as a reservations department.



2200 HORSES WITH PADDED HOOFS

... fly you quietly over land-bound miles to rich Southwestern markets by Braniff. From Chicago or Kansas City to the principal cities of Oklahoma and Texas ... enjoy this effortless, refreshing way to travel.





MR. PRESIDENT: *We give you "Speed and Speed Now"*

For America's Security and all-out aid to the Democracies this page records a few examples of how the nation's largest aircraft plant is getting the job done. At left is aviation's greatest battery of hydro presses which cut and form airplane parts of all shapes and sizes.

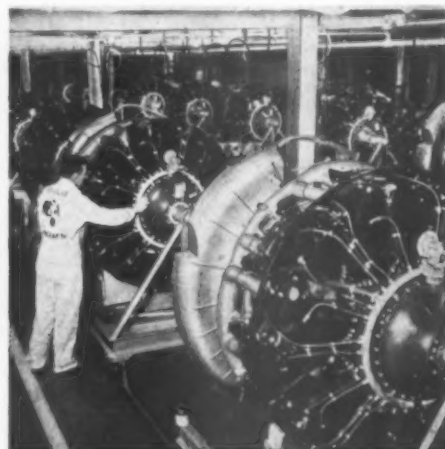
With a combined pressure of 7,900 tons, these presses can produce 44,000 parts every 24 hours. Developed at Douglas, this process is in use under license throughout the aircraft industry. It typifies the many contributions Douglas is making to insure volume output now.



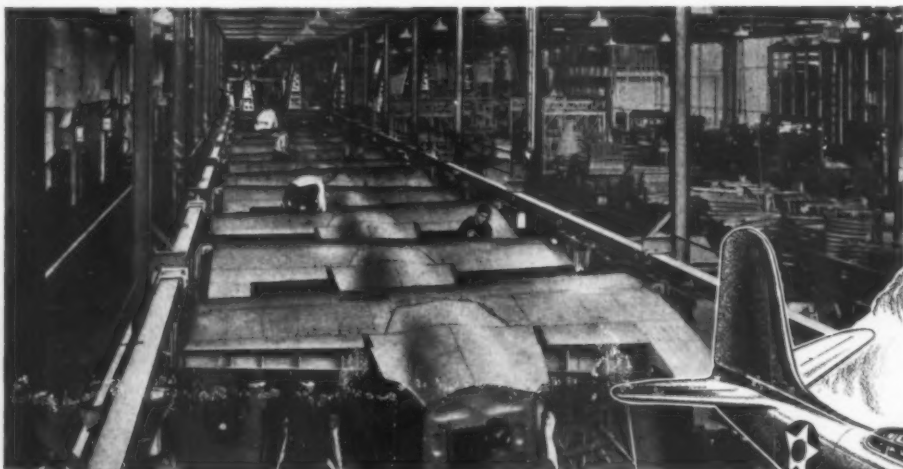
Mass Production is under way as the technique of streamlined assembly is perfected by Douglas Aircraft Co., Inc., where "quality in quantity with speed" is the watchword. Here fuselages of Attack Bombers for U. S. and Britain roll to final completion on assembly tracks.



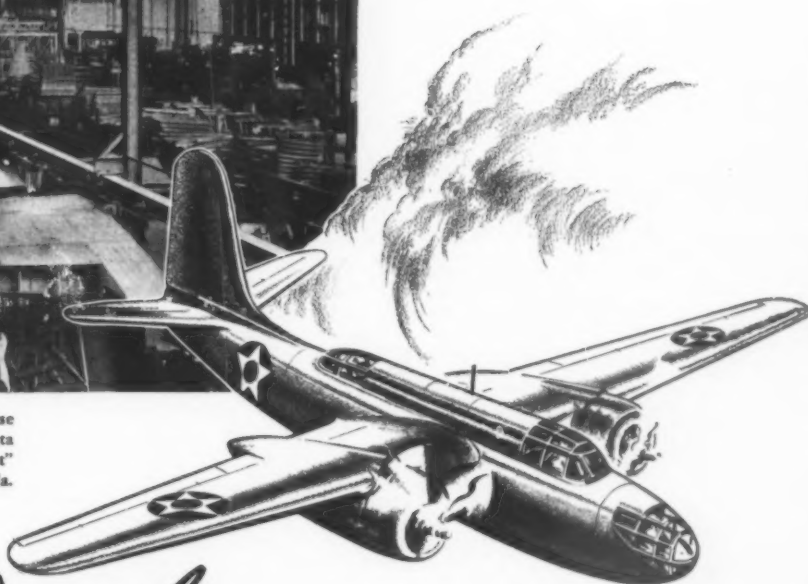
"All Aboard" Here at Douglas, plant layout provides streets and avenues over which electric truck-trains speed the flow of materials. Starting from a "union terminal," these carriers operate on regular schedules. Above shows a train leaving the corner of "D Ave. and 27th St."



"4,000,000 Horses" will be given Douglas wings in 1941, according to engine needs for plane contracts now on hand. This is nearly a million more horse power than will be generated by Grand Coulee and Bonneville Dams combined. Above engines are for Attack Bombers.



Production "Speed and Speed Now" is evidenced by these wing sections on tracks. In addition to speed-up innovations at Santa Monica and El Segundo plants, Douglas is building a huge "blackout" plant at Long Beach, Calif. and will soon occupy a plant at Tulsa, Okla.



Douglas

FIRST AROUND THE WORLD FIRST IN NATIONAL AIR DEFENSE

Graddick Sees Airlines as Only Logical Air Cargo Operators; Urges Quick Development

Does Not Believe Govt. Would Duplicate Transport System With Separate Freight Lines; Rails, Trucks Not Forced Into Business in Self-Defense

THE AIRLINES of the U. S. are the only logical air cargo operators, and the public convenience and necessity does not require duplication of routes by entrance of railroads or truck lines into this field, Charles P. Graddick, director of United Air Lines' air express-mail-freight department, told the Southwest Aviation Conference in Wichita recently.

In one of the best speeches made on the air cargo situation to date, Graddick stated that it would be in the best interest of national defense for the airlines to be permitted to proceed with their plans as fast as possible.

"I do not believe for one moment that the government would duplicate the existing air transport system with a separate air freight system," Graddick said. "It would be just as logical to give United Air Lines a certificate to operate a railroad or a truck line between New York and San Francisco as it would be to give a truck line, a railroad or any other company a certificate for an air cargo operation, between those points."

"Public convenience and necessity does not require such duplication. Major airlines cover the country. Most of the largest cities are served by two or more airlines. There is competitive service between the larger cities of the east and west coasts. A logical expansion of feeder routes combined with the present coordination with surface transportation will give the country complete coverage."

Duplication Unnecessary

"National defense does not require such duplication. The airlines stand ready and willing to cooperate with the Army in any way possible, and by training and experience they cer-

tainly are better equipped than any other agency to coordinate in any defense operation involving air transportation."

Persons in other forms of transportation have been misled by the many "glowing stories of 'get-rich-quick' cargo operations," Graddick said, adding that they have failed to consider the numerous problems involved, such as ground pick-up service, airport costs, etc.

He complimented the "excellent job" being done by the Army's cargo system, but warned that much of the material being transported by the Army "would not at present move on a commercial airline in regular business operations."

The Civil Aeronautics Act of 1938 recognized the pioneering done by the airlines "and made clear its intent that the pioneer routes were not to be needlessly duplicated," he said, adding that this has not been considered by prospective operators.

Plane Not Available

"Few have taken the time or the trouble to explain that no plane available to the airlines today would enable them to meet surface rates," he stated.

Cargo operations by the airlines instead of other transportation agencies would be of greater benefit to national defense because the airlines would use more planes, Graddick said. There would always be a tendency for railroads or truck lines to work out combination rail-air or truck-air hauls, instead of all-air hauls, he explained, adding that "I know of one proposal now for a streamline train haul about halfway across the continent with an air haul the balance of the way."

Graddick emphasized that "there is no indication that the development of air cargo would take such volume from either the railroads or the truck lines that they should be entitled to go into the airline business in self-defense."

"The airlines will take some business, but it will be gradual, and it will probably be offset by the normal development of the country. They will, however, develop new patronage by giving service the railroads and truck lines cannot give. They will change some merchandising methods."

"However, they will not haul coal, iron ore, lumber and many other products which produce the bulk of the rail cargo revenues. There is an enormous local and short-haul tonnage for which the airlines could not compete with trucks and railroads. I firmly believe that each type of transport has a function in the general picture and that each will profit most in its own sphere."

Graddick revealed that had UAL been able to get DC-4's this year, it contemplated converting its sleeper planes into cargo carriers. This would have enabled the company to offer reduced cargo rates, he said.

The formation of Air Cargo Inc. "is evidence of the desire of all the airlines to cooperate to give the

country the world's best air cargo service," he added.

Does Not See Slump

"Personally, I do not think there will be such a great slump in aviation activities after the war, as many think," he stated. "I don't believe the Army will 'dump on the market' a large number of planes as was done after the last war. I am afraid that our Army and Navy will need to keep its aviation training in the highest state of efficiency for many years to come."

"Furthermore, we only have to look at the fate of many of the small nations of the world to know that all of them that have any independence or any funds whatsoever will be buying as many planes as possible. Unless there is a real world peace with a fair prospect of joint enforcement, the whole world must arm 'to the hilt' with planes. This should give our manufacturers a world outlet."

Private flying, feeder routes and international lines will also increase, and the airlines must replace old equipment and buy cargo planes, he added.

Unless the cargo operation is based on a national defense project, the number of this type of plane will depend to some extent "on the ability of the manufacturers to give us planes which will let us more nearly meet surface transportation rates," Graddick said. "Those which have been planned give great promise (one is about ready for delivery to the Army)."

Graddick concluded by stating that the airlines "are the only logical operators for air cargo; that they can extend their cargo operations at less cost and, in fact, at a savings to the government and to the people; that it would not be in the interest of safety to set up duplications; that the airlines would use more and better planes than other agencies and thus help to better 'cushion' the readjustment period; and that it would be in the best interest of national defense for the airlines to be permitted to proceed with their plans to further develop air cargo transportation as fast as possible."

Swedes Operate

A. B. Aerotransport, official Swedish government airline, is now operating daily service from Stockholm to Berlin, Copenhagen, and Helsingfors, with a thrice-weekly service to Moscow in collaboration with the Soviet airline Aeroflot, according to time tables recently reaching the U. S. The Moscow service uses Douglas DC-3 transports but the equipment to Berlin is not indicated.

The Swedish line advertises a 30-day service to the U. S. via plane to Moscow, nine days by train to Vladivostok, five days by train and boat to Kobe, Japan, and 15 days by boat to the U. S.

Matson Forms Air Division

Matson Navigation Co. and Inter-Island Steam Navigation Co. Ltd., 215 Market St., San Francisco, have officially announced formation of a Division of Air Transport, directed by Clarence Belinn, as reported in AMERICAN AVIATION several weeks ago.

PCA REORGANIZES TRAFFIC SET-UP

Sullivan Named Sales Manager; Duff, Klein, Knowles Promoted

A REORGANIZATION of the Pennsylvania-Central Airlines' traffic department, including the creation of new positions and the appointment of off-line traffic managers, was announced recently by the company.

Under the revised set-up, Edward Sullivan, general traffic manager, becomes sales manager, a newly created position. Donald A. Duff, Washington district traffic manager, has been promoted to the new eastern division manager's post; F. C. Klein, Detroit dtm., to western division manager, and Morris Knowles Jr., Pittsburgh dtm., to southern division manager.

For the first time in the company's history, off-line traffic managers have been appointed. They are C. J. Miller, former dtm. at Cleveland, stationed in New York, responsible for the territory from Philadelphia to Boston, and J. O. Urquhart, former assistant to Sullivan, stationed in Atlanta, responsible for territory from New Orleans to Florida.

A general traffic manager, an office manager, a manager of passenger service and one district traffic manager were yet to be named as this issue went to press.

As a result of the reorganization, PCA's roster of dtm.'s is as follows:

Baltimore, J. E. Rehkopf, former passenger agent at Washington; Birmingham, C. P. Hunt; Buffalo, W. I. Gates; Charleston, R. H. Cramer; Chattanooga, A. T. Wright, former assistant traffic manager at Pittsburgh; Chicago, George Spader, formerly with TWA in Pittsburgh; Cleveland, H. E. Kennedy, formerly at Chicago; Detroit, not appointed; Grand Rapids, C. J. Mohan, formerly at Knoxville.

Greensboro, Robert Kelly, former passenger agent at Grand Rapids; Knoxville, Dillon Ferris, former assistant traffic manager at that point; Milwaukee, Charles E. Parks, formerly associated with a railroad company; Norfolk, W. E. McGarry, formerly at Greensboro; Pittsburgh, F. R. Clemens, formerly at Grand Rapids; Raleigh, L. B. Sutton, formerly with the Asheville Chamber of Commerce; Traverse City, R. D. Warfel, and Washington, V. K. Stephens, former traffic manager at Norfolk.

Class in Session

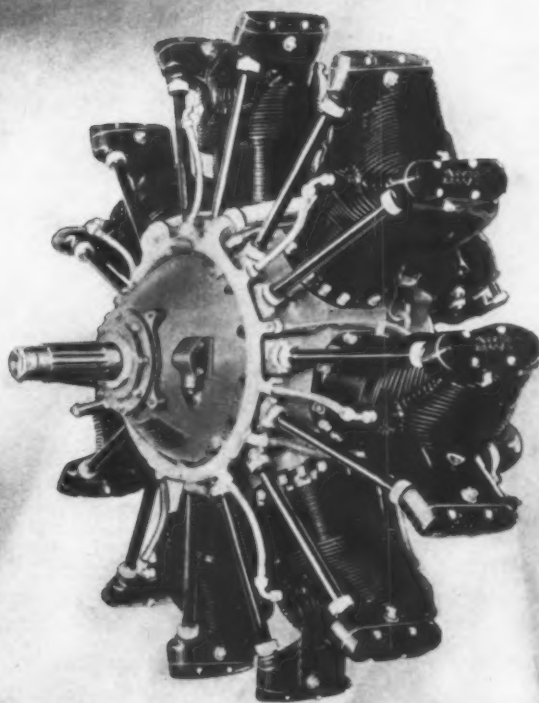


NORTHWEST Airlines' Pilot Mel Swanson tackles the not-too-hard-to-take task of explaining the controls and instruments of a DC-3 to Mary Harriet Shepherd, member of a new class of stewardesses receiving instructions on the fundamentals of flying.

Western Theme



TWA recently opened this novel ticket office in the Hotel Adams Bldg. at Phoenix. Picture shows C. E. Kaul, left, TWA's district traffic manager, and Bill Love, ticket agent, dressed in western garb in keeping with the opening. The corral railings in the office bear the brands of famous ranches in the area. Office exterior has overhanging roof of red tile and an Indian pattern ceramic tile base beneath the windows. Walls are painted with murals showing the desert in the foreground and the Arizona mountains in the distance. Plans for the office were prepared by E. E. Rose, TWA assistant sales manager and system designer, with cooperation of Art Stewart, western region manager.



JACOBS

AIRCRAFT ENGINE CO.

POTTSTOWN, PENNSYLVANIA, U. S. A.

CABLES: JAECO

Johnson is Braniff's Supt. of Maintenance

CHARLES JOHNSON, former assistant superintendent of maintenance for Braniff Airways, has been promoted to superintendent of maintenance, succeeding Stanley R. Shatto, resigned.



Johnson

Born in Tucumari, N. M., 30 years ago, Johnson moved to Texas in 1932 to join the instructors staff of the Dallas Aviation School. When Long & Harmon Airlines was organized in 1933, he joined the company as crew chief, holding this position when Braniff purchased the former company's mail contract in 1935. He was retained by Braniff in the same capacity, later being promoted to inspector, superintendent of service, assistant superintendent of maintenance and superintendent of maintenance. He is married and has no children.

Randall Heads Ad Club

I. S. "Stick" Randall, assistant to the chairman of the board of TWA, has been elected president of the Advertising Club of New York, succeeding Lowell Thomas.

Handy CAB Publication

CAB has announced publication of a 162-page handbook entitled "Aeronautical Statutes and Related Material." Included are Air Commerce Act of 1926, act relating to public airports, Clayton Act, Railway Labor Act, Civilian Pilot Training Act, Air Mail Act of 1934, and others. Handbook may be ordered from Superintendent of Documents, Government Printing Office, Washington, D. C. Price is 15c (no stamps).



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AIR LINES**

New Orleans-Central America Route to be Sought by W. R. Grace

AN IMPORTANT development in the American Export-Pan American battle for routes out of New Orleans to Latin America was seen May 3 when W. R. Grace & Co., steamship operators, informed the CAB of its intention to file application for an air route from New Orleans to Cristobal and/or Balboa, C. Z. via Merida or via other Mexican and/or Central American ports.

This would substantially parallel routes sought by PAA and Export in hearing which opened May 2 before CAB Examiner Thomas Wrenn.

W. R. Grace explained that its application would be prepared within a month and asked either that the PAA-AE hearing be postponed until that time, or that it be granted permission to intervene. Examiner Wrenn granted the intervention over protest of both PAA and AE counsel.

W. R. Grace pointed out in its intention that it has owned 50% of the stock of Pan American-Grace Airways since its formation, and "has during all this time taken an active part in the operations of the company."

Explaining why its request to intervene in PAA-AE was submitted so late, W. R. Grace stated that "it was anticipated that the application (for New Orleans-Cristobal and/or Balboa) would be made by Pan American-Grace Airways Inc. . . . and that Pan American-Grace Airways Inc. would, accordingly, be a party to these proceedings."

"When it became evident that Pan American-Grace Airways Inc. would not take such steps, the applicant decided to file such an application in its own name . . ."

American Export-Pan Am Feud Continues Over TACA Purchase

THE EVER-INCREASING rivalry between American Export Airlines and Pan American Airways for operation of international air routes converged on Central America during the past fortnight, as Export's application to acquire TACA, S. A., for \$1,950,000 was given hearing by the Civil Aeronautics Board.

PAA was present as intervener to oppose the transaction which would give Export control over operations directly competitive with certain PAA services in Central America.

Under terms of the business deal, Lowell Yerex, founder and president of TACA, is to receive \$500,000 cash and \$1,450,000 in Export common stock for substantially all of TACA's capital shares. In addition, Yerex would be retained as chief operating officer of TACA at an annual salary ranging between \$15,000 and \$20,000, depending on the earnings of the company, according to John E. Slater, Export executive vice-president.

Slater testified that Export considered TACA a good buy because the latter has a favorable background of earning power and sound assets, and has developed "in a remarkable way the handling of freight traffic." In an area where transportation by surface means is exceedingly difficult, TACA easily handles goods by air, and "we believe such methods in themselves very valuable." Point was made that U. S. airlines have not developed a freight technique for carrying cargo at a profit, and TACA operations were described as "unparalleled in scope."

TACA has operated profitably every year since its founding in Feb. 1932.

'PAA Blitzkrieg'

Heated cross-fires between Export and PAA counsel flickered frequently throughout the proceeding, especially during testimony by Yerex concerning TACA-PAA competition in Central America. When Yerex described as a "blitzkrieg of Pan American Airways" the

increased competition faced by TACA since negotiations with Export began last fall, vigorous objection to the phrase was raised by John Wood, PAA counsel. CAB Examiner J. Francis Reilly ordered the phrase stricken from the record, but Yerex was permitted to continue his statement that PAA has attempted to form competitive services in Costa Rica and Nicaragua, in addition to the service already established in Guatemala in which PAA has financial interest.

Yerex explained that in Costa Rica a local company backed by PAA has sought a contract with the government to inaugurate service paralleling TACA's, while in Nicaragua efforts along the same line are underway. In the latter country a former employee of TACA has been invited by PAA to form a competing company, Yerex declared, adding that the person involved had been discharged by his company in June 1940, "at the request of the U. S. government."

In describing the type of competition offered by PAA, Yerex said last fall newspapers in Guatemala and Costa Rica carried articles assuring the people that PAA had no desire to make money in Central America, but only wanted to offer service to the people. That kind of competition, he said, is "hard to meet." TACA operations in Honduras and El Salvador thus far have not been similarly threatened, it was stated. Operations in Guatemala were discontinued by TACA last January when the airline's contract was canceled by that government.

Export Financing

Slater indicated that \$2,800,000 to be made available to Export Airlines through issuance of preferred stock by its steamship parent, American Export Lines, would be sufficient to meet airline requirements this year. Some \$400,000, he estimated, would be needed for non-flying equipment for trans-Atlantic operations, another \$400,000 for working capital for trans-Atlantic, and \$1,200,000 for repayment of note representing funds borrowed from Steamship. This would leave \$500,000 cash for the TACA transaction and \$300,000 for New Orleans-Central America operations, if Export's application for new route there is granted.

Slater stressed that financing of the airline through issuance of its own common stock is expected this year, pending (1) favorable settlement of PAA's court appeal regarding Export's certificate, and (2) approval of mail appropriations by Congress.

McKay to Akron

Donald R. McKay, of United Air Lines' Chicago office, has been named district traffic manager for the company in Akron, succeeding John L. Foy, who resigned to join AMERICAN AVIATION ASSOCIATES as advertising and sales manager.

MANILA-SINGAPORE LINE AWARDED PAA

CAB Limits Certificates to 3
Years Because of Present
Emergency

THE CIVIL Aeronautics Board on Apr. 30 authorized Pan American Airways Co. (Nev.) to conduct service between Manila and Singapore, Straits Settlements, for five years from Apr. 29, 1941, by amendment of company's trans-Pacific certificate.

PAA now maintains weekly service between Manila and Hong Kong but under the new set-up conducts operations to Hong Kong and Singapore in alternate weeks. The company opened the Singapore service May 2.

"While resulting in a reduction of the frequency of applicant's Hong Kong service from a weekly basis to a fortnightly basis, such a service will, in addition to providing direct service to Singapore, which has a population of 710,000, enable applicant to offer a connecting service to Burma, Malaya, Ceylon, Netherlands Indies, Thailand and India," CAB said.

"Including an estimate of 10% of revenues from other than U. S. mail pay to provide for amortization of development expense, applicant estimated the total annual additional expenses of the Singapore service at \$117,649. It is the contention of applicant that the losses in revenue from sources other than U. S. mail pay which will result from the curtailment of the Hong Kong service . . . will be more than offset by the additional revenues which will result from the inauguration of a fortnightly service to Singapore. It estimates that losses in revenue from foreign mail, from passengers and from express and excess baggage will total \$154,178.

"On the other hand, it estimates that additional revenues accruing from the Singapore service will be about \$251,296. Thus, the net increase in revenue to the system would be approximately \$97,118. On the basis of applicant's estimates, therefore, only \$20,531 would be required to enable the carrier to meet the additional expenses which will be incurred with the inauguration of service to Singapore."

PAA concedes that the heavy volume of traffic anticipated on the Singapore service "is due in part at least to the present world conditions, and there is no assurance that it would continue beyond the present emergency," CAB noted.

PCA Moves Treasury Dept.

The offices of Pennsylvania-Central Airlines' treasury department were moved May 1 from Allegheny County Airport to the Magee Bldg. in downtown Pittsburgh. PCA's operations and maintenance and engineering departments now occupy space in the airport terminal building and the company's flight control headquarters have taken over an entire wing on the second floor of the same building.

Red, White and Blue



REPLACING THE INDIAN formerly used on all transports of Continental Air Lines is this new insignia with the eagle in red, white, and blue; the top in blue; the middle stripe in white with "Continental" in blue; and the lower portion in red with "Air Lines" in white.



FINER THAN WATCHMAKING! A watch runs in only one direction, remember, so clearances are always taken up by spring-load. Here a Pioneer inspector checks an instrument part under an Optical Microscope, to make certain of accuracy that must be maintained in two directions.

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Investigation into Pan Am's Latin American Air Mail Rates Continues

SEARCHING investigation being conducted by Samuel E. Gates, Civil Aeronautics Board counsel, into the air mail rates being paid Pan American Airways Inc. on its Latin American routes continued during the past two weeks with testimony of three PAA witnesses.

Questions as to the amount of time spent in Washington by various PAA officials were directed to John S. Woodbridge, PAA comptroller, by Gates. When asked if Juan Trippe, PAA president, had spent the "major part of his time" in Washington recently, the witness replied in the affirmative, adding that John C. Cooper Jr., J. Carroll Cone, William Van Dusen and Mark McKee have also spent considerable time there.

After developing that the above officials have not been required in Washington because of CAB hearings, Gates asked if it were not true that they had been engaged in "legislative counsel or contact work" or "in interviewing government departments," to which the witness replied that he did not know.

When asked for the amount of money paid by PAA in the last three years to people "in contact with government departments," Woodbridge answered "none, to the best of my knowledge." Gates then asked about payments to Ben Grey, and the witness answered that he believed PAA had paid Grey \$6,000

"several years ago" but did not know what Grey did.

"Isn't it a fact," Gates asked, "that you paid him over \$20,000?" Woodbridge said he did not know, but that it could have been correct. Gates then mentioned \$4,500 paid to Grey on Nov. 1, 1938, and \$5,000 on Feb. 9, 1940, and the witness said he would have to check the records to be certain.

Questions were also directed to Woodbridge concerning PAA's participation in Aerovias de Guatemala S. A., local Guatemalan airline. PAA and Alfred Denby each own 40% of the stock in the company. Gates stated that the books of Aerovias showed that that company owed PAA \$89,340 as of Dec. 31, 1940.

Previous statements introduced had set the amount at \$74,039 as of that date, but Woodbridge said that there may have been certain "items in transit" which were not included. On Jan. 31, 1941, the books show \$91,414 owed PAA.

On Nov. 30, 1940, outside of the \$60,000 paid by PAA and Denby for stock (Denby's loan from a New York bank being guaranteed by PAA), Aerovias' assets were about \$8,000, cross-examination developed. Woodbridge said he did not know whether Denby had put anything into the company except the \$30,000 for stock, and also did not know whether a survey had been made

Kahle Out of Feeder

Keith Kahle is no longer western representative of Southwest Feeder Airlines Inc., it is learned. He was relieved of his duties by Tom O. Hardin, president of the company which has had headquarters in Oklahoma City. Kahle was founder of the line.

of the traffic potential of an airline in Guatemala.

Reasons for the substantial increases in Latin American service proposed by PAA this year were discussed by John Yoemans, assistant to the vice-president and treasurer of PAA. Yoemans said the general reasons for the increases were (1) increased dependence of Latin American countries on the U. S. as a source of manufactured articles and as a market for raw materials, (2) importance of improved relations between U. S. and Latin America, and (3) increased tourist travel to Latin America because of the European war.

Gates also spent several days questioning Frank Powers, PAA's senior representative in Brazil, and business manager of Panair do Brasil, PAA national company. Gates went into particular detail on estimates of personnel needed at various Brazilian points, equipment used, radio facilities, etc. The amount of use of all types of equipment by the international carrier and the national company was questioned.

Powers stated that proposed expenditure of \$195,000 at Carolina was for two concrete runways. Carolina is an alternate field on the Brazilian "cut-off" route and is used only infrequently. The witness said the runways would be constructed only if present efforts to provide adequate drainage facilities, at a cost of \$15,000-\$20,000, fail.

A concrete runway, to cost \$75,000, is necessary at Pirapora, another alternate, used five times in the last four months, he said. An "ant pest" at this point makes the hard-surfaced runway necessary, he added.

It was revealed at the hearing that Howard Westwood, attorney for the Air Transport Association, will represent Pan American-Grace Airways in its rate investigation. The Panagra investigation is part of the present proceeding, but will not be heard until PAA is concluded.

EAL Loans Joseph George to U. S. Weather Bureau

JOSEPH J. GEORGE, chief meteorologist for Eastern Air Lines, has been loaned to the U. S. Weather Bureau for three months to expedite special fog studies.

George has devised a system making possible forecasts of fog at a specific time in a specific place from 15 to 18 hours in advance. Comdr. Reichelderfer, chief of the Weather Bureau, said the new system is "an outstanding contribution to greater air safety and regularity of schedules."

While with the Weather Bureau, George will be based at Washington National Airport. In addition to Washington, he will conduct studies at Oakland, Los Angeles, Chicago, Pittsburgh and Boston.

A. N. Kemp Elected American Director



A. N. Kemp

ALEXANDER NESBITT KEMP, Los Angeles businessman, has been elected a member of the board of directors of American Airlines, according to announcement by C. R. Smith, president. Kemp began his career with the Hong Kong and Shanghai Banking Corp. of London, England, and was later connected with N. W. Halsey & Co., San Francisco investment bankers.

At present he is president and director of Pacific Mutual Life Insurance Co., a director and member of the executive committee and management committee of the Southern California Edison Co. Ltd., and a director and member of the executive committee of the California Bank.

He has also been active in civic affairs and is a director of the Los Angeles Chamber of Commerce. He is a regional member of the arbitration committee of the New York Stock Exchange.

United Forms Work Analysis Department

FORMATION of a work analysis department under the direction of Donald J. Rogers, former auditor of revenues, has been announced by United Air Lines, to increase efficiency and economy in all departments of the company.

At the same time, United announced the appointment of Maurice E. Sheehan, who has had 11 years' experience in transportation, as auditor of revenues.

Any United department having a problem requiring analysis will contact Rogers, it is explained. Each month, Rogers will submit a work project to all departments, outlining the status of work in process and the order in which jobs will be undertaken.

One of the department's first undertakings will be a study of UAL's requirements in connection with the proposed Chicago air terminal building, after which a survey will be made of passenger service handling over the entire system.

Traffic Control Men Sought

Municipal Civil Service Commission of the City of New York will receive applications for the post of air traffic control operator until May 23, 1941, it was announced recently. Six vacancies now exist at LaGuardia Field. Salary is \$2,400 to \$2,940 a year.

AA Gets Billion-Mile Award



FOR BECOMING the first air transport company to operate one billion passenger-miles without a fatality to passengers or crew, American Airlines has received the Trustees' Commemorative Safety Award from the National Safety Council.

Shown below with the trophy are the following American officers and directors, left to right standing: Charles A. Rheinstrom, Amos G. Carter, William Littlewood, H. K. Rulison, Raymond S. Pruitt, Harry E. Benedict.

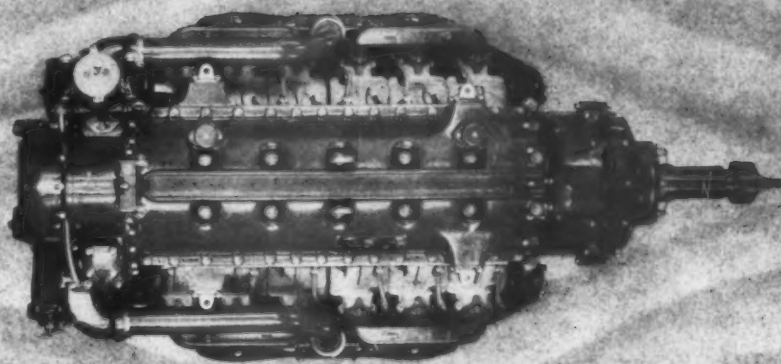
Left to right seated: Walter Scott McLucas, C. R. Smith, R. S. Damon, Harold T. Ames and Silliman Evans. Damon recently took leave of absence to become president of Republic Aviation Corp.

Directors not shown in the picture below include James Bruce, Edward M. Queeny, Thomas Hammond, David S. Ingalls and newly-elected A. N. Kemp, who is pictured on this page.

Full view of American's trophy appears at left.



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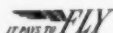
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AMERICAN AVIATION DIRECTORY: Published twice a year, spring and fall. Complete listing of aviation companies and organizations, including government agencies and their officials and important personnel. \$3 single copy; \$5 per annual subscription. Bulk rates on request. Next issue Oct. 15, 1941. DAVID SHAW, Managing Editor.

Fortnightly Review

(Continued from page 1)

The truth is that the NACA report was made under peculiar circumstances and NACA probably wishes it had never been made or published. Far from being kept secret, the report was distributed to all operators, to the Douglas company, and received prompt attention in the former Bureau of Air Commerce.

Three airlines conducted exhaustive tests and found that there is no occasion for a stall with power on in routine airline operation. Stability tests exonerated the DC-3 with complete satisfaction. The three lines filed a joint report with the Bureau of Air Commerce and all pilots have been thoroughly trained in handling the plane.

Subsequently the Army and the Navy conducted their own tests and have both purchased DC-3's. Foreign airlines chose the DC-3 in competition with many other types. If there was any inherent instability in the DC-3 it would have been known long ago. The Clark committee's investigator evidently is a strong advocate of slots, but even the use of slots in the DC-3 was long disproved by scores of genuine experts.

The Clark hearings have signally failed to bring discredit either to government agencies, to the Douglas company or to the airlines. Such muck raking is not constructive nor in the best interests of aviation or the public welfare. The DC-3 was an excellent product when it was first built and is still a first class airplane in every respect. Its flying record proves the point.

It is encouraging, therefore, to note that on the other side of Congress, Representative Jack Nichols' special House investigating committee is not going out to produce sensational scareheads. Mr. Nichols and his colleagues are quietly studying the matter of airline accidents and looking for constructive solutions. While the Senate hearings—so far—have been a dud and are wasting thousands of man hours of valuable time of government employees, the House committee bids fair to do an honest and open-minded job of investigating.

Results Count

THERE CAN BE no minimizing of the truly gigantic production effort of the U. S. aircraft manufacturing industry. Air history is being made day after day. The results are showing on the production lines.

Both North American Aviation Inc. and Stearman Aircraft Division of Boeing Airplane Co. are to be congratulated for their respective production of one thousand trainers under the new war contracts. Fairchild Aircraft Division at Hagerstown, Md., is also to be commended for producing its 500th trainer for the Air Corps. It has been just a year since the United States heard the President's call for 50,000 airplanes. It has been only since late last summer that contracts began being awarded in any quantity. When three companies can report a total production of 2,500 trainers within the intervening time, there is cause to rejoice.

America's war effort is just getting started. New airplanes such as the Army's first 2,000-hp. single-seat fighter, the Thunderbolt, produced by Republic Aviation Corp. within eight months, and the new Vultee Vengeance dive bomber built for the British in less than 10 months, are mere indications of the vast quantity of the world's best fighting craft now beginning to move out of the nation's expanded factories. America's mighty aviation resources are just beginning to be tapped.

It Can Be Done

IT IS DIFFICULT to make big figures mean something. The world of millions and billions is far beyond the scope of ordinary human understanding and comprehension. Newspapers carry so many huge figures today that the commemorative safety award presented to American Airlines Inc. on Apr. 22 could easily be passed off by the average person as just another statistic.

The fact is, however, that the award to American Airlines is exceedingly noteworthy meriting many expressive adjectives. American Airlines is the first air transport company in the world to operate one billion passenger miles without a fatality to passenger or crew. This covers a period of more than five years, a world record in safe air transportation. We commend the National Safety Council for recognizing this extraordinary achievement and we add our congratulations to those which American is receiving from the entire industry and from the aviation public for reaching this astonishing safety figure. The entire American organization is responsible for the record. It is an enviable one. American Airlines has shown the United States and the world that it can be done.

Fifteen Years of Progress

IN AIR TRANSPORTATION 15 years is a long time. Congratulations are in order to Western Air Lines, the oldest name in U. S. air transportation, on the celebration of its 15th birthday on Apr. 17. It is the first American airline to complete a decade and a half of continuous service. Western Air's history is a proud one. It is part of the west. Like so many other developments since 1900, the west has pioneered many things in aviation. Western Air flew the first scheduled passenger flight and flew the first de luxe multi-engined passenger planes. It is soon to open a new air link to Canada. May the spirit of enterprise and vision which dominated Western Air's pioneers continue to be the guiding influence behind this sturdy company.

Speed the Mails for Defense

THE GREATEST single contribution the Civil Aeronautics Board could make immediately to the nation's taxpayers and users of air mail is to unsnarl the technical knots which prevent the Post Office Department from placing air mail on all airline schedules. The restriction of air mail to mail schedules only is causing thousands of delays in mail delivery. The taxpayer is not getting his money's worth. Air mail should be sent out at all times by the first plane. The public assumes as much. It would cost the government nothing more and would aid in distributing the mail more evenly. Here is a public service of benefit to commerce and the national defense. It should be a project for immediate action.

THE N. Gross' tical field story of full In the de and a gro controlling terest in company, almost de but wit happy fa for prod record-ho airplanes. then C personali career been ch interw with the g of Lockheed heads.

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YOUTH I Manual Youth of Century N. Y.: 2

This is s specifically and leader aviation. aviation g activities. Youth pr utilized in a complete BIBLIOG Supplement plied from the In Sciences tration, N. Y.;

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AIRCRA J. Clari aid Pr York, M Because installa authors, Lockheed work for electrician

FOLKS WORTH MEETING



THE NARRATION of Robert E. Gross' activities in the aeronautical field over the past decade is the story of Lockheed Aircraft's growth to full stature within the industry. In the depression days of 1932, he and a group of associates bought a controlling interest in the company, then almost defunct but with a happy faculty for producing record-holding airplanes. Since then Gross' personality and career have been closely interwoven with the growth of Lockheed aircraft which he now heads.



Gross

Major test for Bob Gross and his organization came in June 1938 when the British Air Ministry gave Lockheed a \$25,000,000 order for 250 airplanes, the largest single order placed in this country up to that time.

For a growing organization attempting to achieve volume output, the going at first was hard. Only 50 airplanes had been turned out by June 1939. A major achievement to the record of Bob Gross is that he was able to turn out the remaining

200 British airplanes within the following seven months—weeks ahead of contract schedule.

An earlier career in international banking in New York and London was interrupted in 1928 when Gross bought for his own account an interest in Stearman Aircraft, disposing of this shortly afterward to United Aircraft & Transport. Convinced of aviation's destiny, it was not long before he had organized Viking Flying Boat Co. of New Haven, Conn., building a four-place seaplane.

Public demand for seaplanes was meager in 1929, with the country on the brink of a major depression, and the venture was abandoned. Bob Gross did not lose faith in aviation's future and in the early 30's he was organizing Varney Speed Lines with Walter Varney. It was while he was with Varney that he became interested in the fast Lockheed Orion transports used on the San Francisco-Los Angeles airline. Purchase of the controlling interest in Lockheed followed shortly.

Aviation history has been made since Gross delivered the last airplane of the original British order—and ahead of time. Now a major factor in meeting British and U. S. war needs, his organization holds orders for more than 10 times the original \$25,000,000 commitment.



"Do you think we should tell him he was supposed to take us just to the New York Airport?"

being an industrial panacea is stressed by the writers who explain clearly and objectively the limitations of the material where the strength, hardness or weight of steel is needed, an electrical or heat conductor required, or where great sizes in one piece must be made.

Included among the chapters on the uses of plastics in individual industries is a discussion of the role of the material in aircraft construction. Here attention is called to the lamentable fact that aircraft designers and draftsmen as a whole have a very meager knowledge of the extensive applications to which plastics may profitably be put.

THE SHIPS AND AIRCRAFT OF THE U. S. FLEET; Two-Ocean Fleet Edition, by James C. Fahay, Associate, U. S. Naval Institute Published by Ships and Aircraft, 1265 Broadway, New York, N. Y.; 48 pp.; .75.

This useful booklet not only serves to simplify some of the seemingly complicated nomenclature used to designate naval ships and aircraft, but it includes details of the greatest naval expansion in American history, exceeding even that of 1916-18.

Aircraft models in active operation during 1940 or on order at the end of the year are listed. Dimensions, weights, and performance figures are largely from unofficial sources. Most of the designations, dates, and powerplant data have been taken from officially released government documents. Experimental planes ordered since July 1, 1940, are omitted. It is noted that no details have been released on newer models, some of which

are severely restricted. Included are brief descriptions of utility and training planes.

As of Jan. 2, 1941, 6,290 naval airplanes were building or on order, the author states. Contracts for 1,033 others were pending. During 1941 about 4,000 will be delivered. Included are 1,583 trainers and 1,221 replacement craft to re-equip combat squadrons now operating obsolescent models. Allowing for losses through the year, approximately 6,300 naval planes will be in service on Jan. 1, 1942, it is estimated. Present program provides for a total strength of 16,000 planes and 16,000 pilots.

STEELE'S AID TO PILOTS; Sixth Edition; Published and Distributed by Steele's Aid to Pilots, 2227 W. Washington Blvd., Los Angeles, Cal.; 114 pp.; \$1.

This booklet covers every pilot regulation, is compiled from the latest Civil Air Regulations, and is intended to give the essentials of the CAR to many students and pilots who have voiced a desire for a simple, easily understood version.

In a preface, C. Earl Steele points out that "the contents of this book are not confidential in any sense of the word as the information contained is compiled from the latest available Civil Air Regulations. In most cases the regulations are copied. However, it has been necessary to re-word and consolidate other paragraphs to eliminate cross-reference and non-essentials, thereby creating an easy reference."

Over 18,000 copies have been sold to operators and colleges.

Bookshelf



YOUTH IN AVIATION; An Air Youth Manual for Leaders; Published for Air Youth of America by D. Appleton-Century Co., 35 W. 32nd St., New York, N. Y.; 264 pp.; \$2.50.

This is said to be the first book written specifically to meet the needs of teachers and leaders of groups interested in junior aviation. It tells how to organize junior aviation groups, how to plan a program of activities, and gives information on Air Youth projects and how they may be utilized in a youth program. Included is a complete section on gliding and soaring.

BIBLIOGRAPHY OF AERONAUTICS, Supplement to Part 28—Fuels, compiled from the Index of Aeronautics of the Institute of the Aeronautical Sciences, by Work Projects Administration, 1505 RCA Bldg., New York, N. Y.; 164 pp.

This supplementary volume brings to date the bibliography on fuels included among the 50 subjects on which aeronautical bibliographies have been published by WPA during the past four years. Because of limited number of copies published, distribution is limited to organizations stating the purpose for which the volume is wanted. Copies are not sent to individuals or sold.

WPA has also published an "Alphabetical List of Aeronautical Bibliographies with Subject Contents," to serve as guide in the location of specific subjects in the complete set of 50 subjects.

AIRCRAFT ELECTRICITY, by Norman J. Clark and Howard E. Corbitt; Ronald Press Co., 15 E. 26th St., New York, N. Y.; 184 pp.; \$2.50.

Because no text on aircraft electrical installation and design was available, the authors, both electrical engineers for Lockheed Aircraft Corp., prepared this work for three specific groups: (1) the electrician with practical shop questions,

and the designer making calculations and layouts; (2) the electrical parts manufacturer concerned with aircraft equipment, or those proposing to enter the field; (3) the practicing aircraft electrical engineer, for reference.

Asserting that the great increase in aircraft manufacturing activities opens new opportunities and makes it necessary to train quickly and efficiently great numbers of men in electrical installation and design, the authors have endeavored to fill a requirement by devoting the volume specifically to aircraft electricity.

The book contains 81 figures and 38 plates.

SIMPLIFIED AERIAL NAVIGATION BY DEAD RECKONING, Second Edition, Revised, by J. A. McMullen; Chemical Publishing Co., 234 King St., Brooklyn, N. Y.; 96 pp.; \$2.50.

The author, a lieutenant and navigation instructor in the RAF (1917-1919), deals with two subjects in this writing, originally prepared as a series of lectures given to RAF pupils in 1918. The subjects are: (1) the magnetic compass and its adjustment on airplanes; (2) cross-country flying by compass and other instruments.

Using 25 illustrations, including eight color plates, McMullen has attempted to make this a simplified work, treating only basic principles, although much more could be written around every point.

PLASTICS IN INDUSTRY, by "Plastes"; Chemical Publishing Co. Inc., 234 King St., Brooklyn, N. Y.; 241 pp.; \$5.

The authors declare that their object in writing this book consists largely in clarifying confused ideas regarding the plastics industry and in bringing to the attention of industrialists the varied uses of plastic materials by showing how they have proved their value in an ever-increasing number of applications.

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Delta's Atlanta-Cincinnati Line, Extension to Savannah, Increase Route Mileage 47%

Company Started 16 Years Ago; Operated First Mail-Passenger Service on West Coast of South America; Pioneered Route Across 'Deep South'

WITHIN the past month, Delta Air Corp. has increased its route mileage approximately 47% by opening a new 399-mile mail-passenger-property route between Atlanta and Cincinnati, and by extending its present AM24 from Augusta to Savannah.

Addition of these new services, totaling 512 miles, increases the company's mileage from 1,089 to 1,601. Atlanta-Cincinnati will be known as AM54. The company is at present operating the route without mail pay, pending approval of funds by Congress.

An Atlanta-Cincinnati route will afford a "direct single-company service between these important cities," the Civil Aeronautics Board said in establishing the line. "In addition, it would connect these cities with Knoxville on a north-south route and would provide service to Lexington which is now without any airline service. The evidence establishes a strong community of interest and flow of travel and commerce between Atlanta and Cincinnati developed over a period of years."

CAB awarded the route to Delta because it can be "operated as an integral part of Delta's system . . ." The company will also be able to

"make a greater and more efficient use of its equipment," it said.

Augusta, the third largest city in Georgia, and Savannah, second largest, are connected by extension of AM24. CAB said there is a strong community of interest between Savannah and Atlanta.

Sixteen years ago, in 1925, Delta, under the name of a predecessor company, first engaged in aeronautical activities, with headquarters in Macon, Ga.

In 1927, with headquarters in Monroe, La., under the name of a subsequent predecessor company, but under the management of C. E. Woolman, present vice president-general manager, Delta secured concessions from the Peruvian government for the transportation of passengers and international mail, and started the first mail-passenger operations on the entire west coast of South America.

After a period of successful operation, this airline was sold and became the nucleus of Pan American-Grace Airways.

In 1929, under the name Delta Air Service, the first passenger airline across the "Deep South" was established between Ft. Worth and Jackson. This line was first extended to Birmingham and subsequently to Atlanta, using six-passenger Travelair monoplanes, powered with Wright engines.

In 1934, as Delta Air Corp. (the present corporate identity of Delta Air Lines), the company was awarded an air mail contract from Ft. Worth to Charleston, S. C. Service started July 4, 1934, with seven-passenger tri-motored high-wing Stinson monoplanes, cruising at 100 mph.

In 1935, Delta speeded up its flying time by inaugurating service with eight-passenger tri-motored low-wing Stinsons, cruising at 135 mph. A night run was established between Atlanta and Ft. Worth, thereby providing two round trips daily over that portion of the route.

Ten-passenger, twin engine Lockheed Electra equipment was put into service by Delta in 1936. By the end of 1939, the company was operating 16 flights daily with these planes. In Mar. 1940 increased passenger traffic made it necessary to purchase Douglas DC-2's, and later in the same year, the company, in need of still larger planes, switched to DC-3's. In Feb. 1941 Delta had five of these ships in operation.

The company's route mileage remained more or less static from 1934 to 1941. The CAB's decision in January, however, practically doubled Delta's activities. The company also has further plans, and on May 1 applied for extension of AM24 from the intermediate point of Columbia, S. C., to Knoxville via Charlotte and Asheville and/or Columbia-Knoxville via Spartanburg, Greenville and Asheville.

Delta's Cincy Staff

Delta Air Corp. is employing the following persons at Cincinnati, terminal of the company's new AM54: Thomas M. Lemly Jr., district traffic manager; Finis Fox, station manager; E. James Tilton, traffic representative; Milton Mallis, chief mechanic; W. O. Ford, mechanic; R. C. Conner, chief radio operator, and Kellogg Falls, radio operator. R. J. Williams, W. R. Whitley, and John D. Hallman are agents.

Offices to Atlanta

DELTA AIR CORP. has occupied its new hangar and general offices at Atlanta Municipal Airport, the general offices having been removed from Monroe, La.

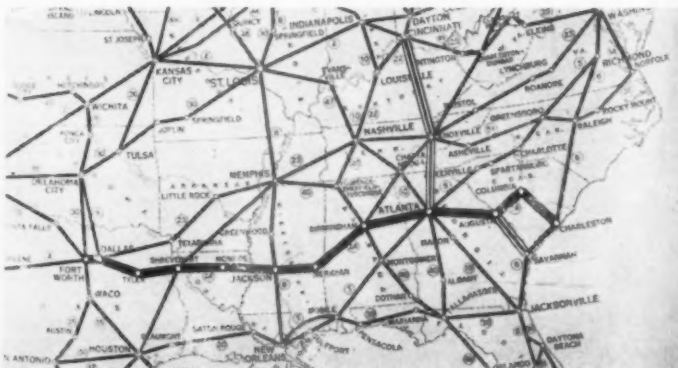
Delta in Pictures



NEW AND OLD pictures from Delta Air Lines' files are presented here. At top is a passenger unloading scene, showing one of the new Douglas DC-3's from Delta's fleet. Second photo shows the late Dan Tobin (left) and C. E. Woolman, now Delta's vice-president and general manager, with their Fairchild FC2, the first cabin plane in South America, just before the first air mail flight from Lima to Talara, Peru, in 1927. The line-up of open biplanes is Delta Air Corp.'s fleet of crop dusting craft as it appeared a few years ago at Monroe, La. Woolman is in front of plane at extreme left. An attractive note in the album of pictures is furnished in the person of a Delta stewardess in front of the company insignia on a DC-3.



Map of Delta's System



MAP SHOWS Delta Air Lines' system with new routes, Atlanta-Cincinnati and Augusta-Savannah.

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DELTA AIR LINES ★ *The Trans-Southern Route*



He Managed the World's 7th Largest Air Force—That's Collett E. Woolman

FEW PEOPLE in today's air transport industry know that Collett Everman Woolman, vice president and general manager of Delta Air Corp., ever managed the seventh largest air force in the world (about 20 planes), or that he flew the first air mail in Peru and started a line that was the forerunner of part of the present Pan American-Grace Airways system.

C. E. Woolman rarely talks about himself. He lives today in the small, quiet residential town of Monroe, La., running both Delta Air Lines and its parent company which has long been an important factor in the crop dusting industry of the South.

"We always do more than we promise," he says, and perhaps this statement best typifies the character of a man whose history in aviation has been far more extensive than even some of his friends realize.

It was 'way back in 1923 when airplanes were being used for barnstorming but weren't considered of any special commercial value, that Woolman first dug into flying. He started some experimental work in insect control and crop dusting with Dr. R. R. Coad at the government's agricultural station at Talulu, La., and out of this early experimenting grew several important companies and a great boon to cotton growers.

George Post (now with Edo Floats), happened to come into contact with Woolman's work and became excited about the possibilities of using airplanes commercially for something besides carrying passengers in \$1.50 hops off local airports.

Post went to New York and interested Tom Huff and Elliott Deland in these possibilities, and the Huff-Deland Dusters were organized in Ogdensburg, N. Y. This company built planes and began crop dusting in the Mississippi Valley in 1924. The outlook was so good that two men, later to be important in airline operations, joined the company. One of these was Woolman who was in charge of field operations.

The other man was Harold R. Harris, who left the Army's McCook Field to be vice president in charge of operations. Today Harris is one of Pan American's top executives. Huff-Deland expanded throughout the South, from North Carolina to Arkansas and Texas, and in 1926 even expanded to California and Mexico. In those days landing fields were scarce and there was little avia-

tion gasoline available except at terminal points. The company had to obtain a special permit to put lead into gasoline to ethylize it.

Crop dusting became a prosperous industry—but only for one season out of the year. So Woolman went to Peru to see what could be done about operating in Peru's summer while winter was in force in the U. S. He found that Peru was battling the same pests as the South—the destructive weevil and the leaf worm. Woolman obtained a 10-year contract for all airplane dusting in Peru, a 7-year exemption from all taxes, and \$200,000 in contracts with half the money in the bank.

In the winter of 1926-27, Woolman and Harris took six planes to Peru (more planes than Peru's air force had), to perform the first crop dusting by airplane south of the Equator. Harris went on south to Argentina to investigate the grasshopper plague and on his way back visualized the idea of an air route around South America.

With the crop dusting operations moving smoothly, Woolman collaborated with Harris on the airline idea and went to New York with him to interest the bankers. They found a willing listener in Richard Hoyt of the Hayden Stone banking firm, and it wasn't long before Woolman was on his way back to Peru to interest that country in the subject of air mail. He found the Germans had already tried to get a mail contract, but he succeeded in getting it for the U. S. company.

For a year Woolman and Harris carried passengers and mail on a 780-mile route in Peru and in 1928 they sold the company, 50% to Pan American Airways and 50% to W. R. Grace & Co. Dan Tobin, who was killed a few years ago, flew the first mail routes in Peru for Woolman and Harris.

In 1929 Woolman sold his crop dusting interest in Peru, with a profit, and returned to Louisiana. By this time air transportation was under way in this country and Woolman opened Delta Air Service Inc. In June 1929, flying passengers between Dallas and Birmingham. Woolman thought the way to get a mail contract was to pioneer a passenger service but in Oct. 1930, he found that this idea wasn't sound—not in those days.

Delta was forced out of the picture when the Post Office Dept. gave a mail contract to American Airways on the route Delta had pioneered, and Delta sold its equipment to the successor. Woolman had operated with a perfect safety record.

He returned to crop dusting with his Delta Air Corp. and although the depression wore on and business was none too good, he stuck it out until the air mail cancellations of 1934. When the time came for bids, Delta bid for its old route—Dallas-Birmingham—plus the proposed extension to Charleston, S. C., and obtained the contract on its bid of 24¢ per mile.

Since that time, Delta has continued to develop its airline territory, and has endeavored to serve the South. In the early days 70% of its business came from other airlines, but today its business is over 70% on-line traffic.

Crop dusting has not been forgotten. It is still a large part of the activities of Delta Air Corp., the parent company. There never has been a time since 1925 when Delta or its predecessor crop dusting outfit has not had between 16 and 20 planes in operation. In fact, in the early days, Woolman believes the company maintained the seventh largest air force in the world and has statistics to back up the claim. Today, Delta overhauls its crop dusting planes and engages in considerable rebuilding on the older ships.

Oldest pilot with Delta is Henry E. Elliott, chief of the duster pilots today. He has been flying for Delta and its predecessors since 1924—an all-time record of consistent service. Delta today has dusting and insect control contracts all over the South, including a five-year contract with TVA for mosquito control.

Delta's Top Executives



C. E. Woolman
Vice-president and general manager



C. E. Faulk
President of Delta Air Lines

Although Woolman can be rated as one of the important air transport executives in the nation, his office is a small room about 10 x 16 feet and his old unpretentious desk sits on a bare concrete floor. He doesn't care for trimmings.

Like others in the close Delta family, Woolman lives on a quiet residential street in Monroe in a typical comfortable American home. Everyone in Monroe knows him and he knows everyone in Monroe. To everyone but his wife he is "C. E.," but to his wife he's Collett. His straight-shooting philosophy and his quiet, unassuming manner have earned him an important place in air transportation. He constantly passes off the credit to others, but all agree that it's Woolman who has made the Delta name what it is.

Delta Officers

C. E. FAULK, president. Succeeded D. Y. Smith as president and director of Delta Air Corp. in the spring of 1935 following his retirement as a newspaper publisher in Louisiana and Texas. Faulk is a financier, a director of Central Savings Bank & Trust Co. of Monroe, La., and a holder of properties in Louisiana and Texas.

LAIGH C. PARKER, vice president and general traffic manager. First engaged in aeronautical activities when he learned to fly in 1926 and became connected with the airline industry in 1930 when he was employed by American Airways Inc., predecessor of American Airlines. Starting as radio operator in Jackson, Miss., Parker later became station manager (1932), city traffic manager (1933) and district traffic manager for the Monroe-Jackson-Meridian territory (1934). He was named general traffic manager of Delta in May 1934, and was promoted to vice president and also elected a director in Dec. 1939. Parker holds the rank of Captain in the Officers Reserve Corps, is an associate member of the American Institute of Radio Engineers, and is president of the Air Traffic Conference of the Air Transport Association.

GEORGE R. CUSHING, operations manager. Became associated with the industry when employed by Pitcairn Aviation Co. in 1927. Later was named southern division superintendent of Eastern Air Transport when that company purchased Pitcairn. In 1932, he was promoted to vice president and general superintendent of Eastern Air Lines, which position he held until he joined Delta in 1935 as flight captain. In 1937, he was

made chief pilot for Delta, continuing in that capacity until being made operations manager in 1940.

C. E. WOOLMAN, vice president and general manager (see story elsewhere on this page).

PAA Anniversary

PAN AMERICAN AIRWAYS on Mar. 31 marked the first anniversary of operations from LaGuardia Field. A year ago on that date, the Yankee Clipper, carrying nine passengers and 5,093 lbs. of mail, took off for Lisbon under command by Capt. Charles A. Lorber. This year the clipper was commanded by Capt. Francis Joseph Patrick Nolan and carried 20 Lisbon passengers, eight for Bermuda and 5,775 lbs. of mail. Capt. Nolan was making his 31st Atlantic crossing.

The anniversary trip was the 311th crossing of the Atlantic by PAA since inauguration of service on May 20, 1930, and the 177th which had either originated or terminated at LaGuardia. Since May 1939, Clippers have flown 1,200,000 miles with 3,750 passengers and 700,000 lbs. of mail.

In Charge of Traffic



Laigh C. Parker
Vice-president of traffic of Delta Air Lines

Operations Head



George R. Cushing
Operations manager of Delta Air Lines

New

OUTLINE of future Technical nautics, D elected R of the rad of Standa pointment to stream tivities of formation advisory agencies a in solution communic

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Problem strument munication research Dellinger



New RTCA Committees Named To Tackle Aero Radio Problems

OUTLINING the broad objectives of future research by the Radio Technical Commission for Aeronautics, Dr. J. H. Dellinger, newly elected RTCA chairman and chief of the radio section of U. S. Bureau of Standards, has reported the appointment of three main committees to streamline and coordinate activities of RTCA, which since its formation in 1935 has acted in an advisory capacity for government agencies and industrial organizations in solution of radio navigation and communication problems of aviation.

General functions of RTCA, described by Dr. Dellinger, will be to (1) centralize information for the benefit of all aeronautical radio interests; (2) make recommendations to the CAA and FCC and other government agencies as occasion may require; and (3) to formulate statements of research needs for, and otherwise assist, the National Defense Research Committee and the Defense Communications Board and, thereby, the armed forces.

Problems of radio navigation, instrument landing and radio communication are slated for extended research and study by RTCA, Dr. Dellinger indicated.

Radio navigation problems to be tackled include those of range systems, both low and ultra-high frequencies; types of courses; direct point-to-point flying without use of range systems, with particular attention to use of direction finders. Various and sometimes conflicting needs of military, transport and itinerant flyers will be considered and suggestions offered toward the development of aircraft equipment applicable to each group.

In the belief that lack of a widespread instrument landing system is "almost a calamity," Dr. Dellinger expressed hope that RTCA may supply leadership to clear away obstacles to future progress. Instrument landing problems have been worked on for 12 years now, Dr. Dellinger pointed out, and establishment of nation-wide network "has been delayed beyond anything any of us would have believed possible at the outset."

Continued effort in the field of radio communication is held needed to improve reliability and reduce weight, cost and complexity of aircraft receiving and transmitting equipment. Question expected to receive considerable attention is that

NWA Appointments



Carl Griffith, left, has been appointed divisional dispatcher for Northwest's eastern division, and LeRoy Peterson, right, Minneapolis station agent, has been promoted to schedule clerk in charge of schedules for all pilots and stewardesses on the eastern division.

of radio equipment to be carried on all classes of aircraft during the transition period of the next few years, when change is being made from intermediate to ultra-high frequency bands.

On the operating side, there exist a multitude of problems dealing with traffic control at airports and on airways and the speeding up of approach procedures by better techniques or improved facilities.

Committees appointed by Dr. Dellinger to direct RTCA research in aeronautical radio are:

Executive Committee, to formulate policies and supervise work of the Commission: Dr. Dellinger, Chairman; Paul Goldsborough, RTCA secretary and president of Aeronautical Radio Inc. (A. E. Harrison,

Aeronautical Radio engineer alternate); Col. Hugh E. Mitchell, War Dept. (Maj. D. K. Lippincott, alternate); Adm. S. C. Hooper, Navy; E. K. Jett, FCC (E. M. Webster, alternate); Henry du Pont, du Pont Airport, Wilmington, Del.

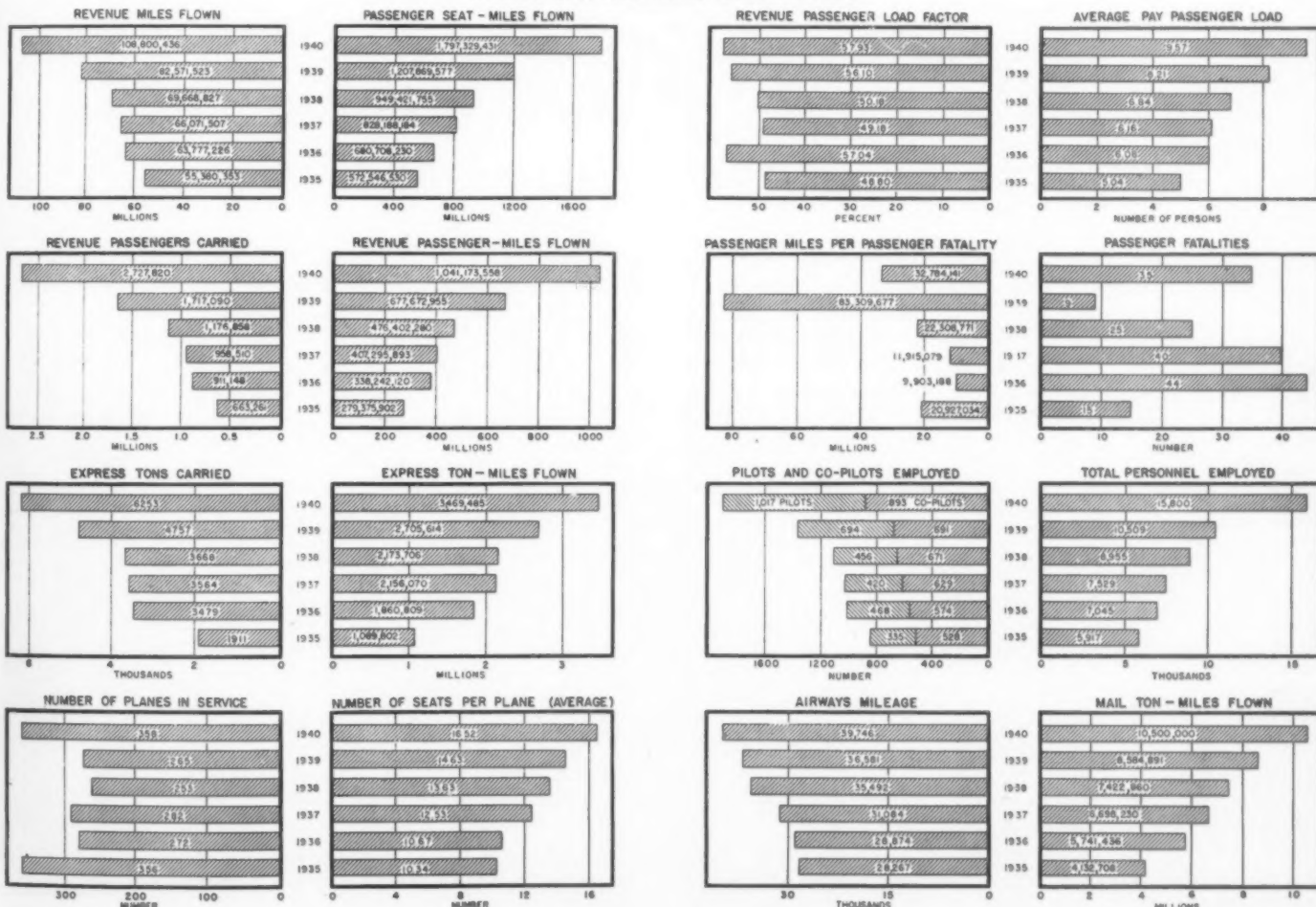
Radio Facilities Committee, to conduct studies of operation of equipment and facilities already in service: J. G. Flynn Jr., American Airlines, chairman; Fowler W. Barker, Air Transport Association; H. P. Little, Air Line Pilots Association; Comdr. A. R. Price, Navy (Lt. Comdr. W. E. Cleaves, alternate); Jack Berry, Cleveland Municipal Airport; Lt. Col. Wallace Smith, War Dept.; Comdr. J. G. Farley, Coast Guard; E. L. White, FCC.

Radio Development Committee, to handle all new projects and make recommendations on undertakings of research of interest to industry or government: D. K. Martin, Bell Telephone Laboratories, chairman; R. T. Freng, United Air Lines; H. K. Morgan, TWA; Comdr. John R. Redman, Navy (Lt. H. C. Owen, alternate); Col. T. C. Rives, War Dept. (Lt. Col. J. H. Gardner, alternate); Lt. F. L. Moseley, War Dept.

CAA collaborators with RTCA are: Charles I. Stanton, assistant administrator; Thomas B. Bourne, director of federal airways; W. E. Jackson, head of radio development section, and A. S. Koch, director of inspection.

Six Years of Domestic Air Carrier Progress

(Source: Civil Aeronautics Administration)



Operation of Canadian Colonial Ltd. Not Needed, CAB Examiner Asserts

OPERATION of Canadian Colonial Airways Ltd. between Montreal and New York "will not serve a useful public purpose responsive to a public need" and the service will not be in the public interest, according to a proposed report issued Apr. 25 by CAB Examiner Alfred Forster, recommending that the company's application for a foreign air carrier permit be denied.

CCA sought a permit under the "grandfather" clause of the Act, but after an examiner's report, amended its application. Forster's report was on the amended application.

Forster stated that CCA Ltd. is not entitled to a "grandfather" permit. In order to be so entitled, he said, applicant must show (1) that it held a permit issued by the Secretary of Commerce under sec. 6 of the Air Commerce Act of 1926, (2) that this permit was in effect on May 14, 1938, and (3) that the permit authorized the applicant to operate between Canada and the U. S.

"In this respect it is important to note that this proceeding presents the only instance in which a foreign air carrier who has applied for a permit under sec. 402(c) has failed to produce for the record a written permit issued by the Secretary of Commerce," Forster said. By reason of "its inability and consequent omission" to show that it was the holder of such a permit, he recommended that CAB deny the request for a certificate under 402(c).

CCA Ltd. had claimed that under the Air Navigation Arrangement between U. S. and Canada which was effected in 1929 and in effect until Aug. 1, 1938, it possessed all of the authorization required. Forster stated, however, that the company must have actually received a certificate from the Secretary of Commerce.

On the question of whether CCA Ltd. is entitled to a certificate under 402(b) (which requires a showing that service is required by public interest and that applicant is fit, willing and able), Forster said that the record does not indicate that the company prior to Jan. 1, 1940 "made any effort to be, or that it was at any time, independently able to carry on its operations without financial aid and assistance from the incorporated company (CCA Inc.—ed. note) in the loan of equipment and personnel."

At present there is an agreement between Ltd. and Inc. providing for bases of allocation of expenses and division of revenues derived by each company from all sources other than mail pay, the report noted. Ltd. contends that this relationship "is beneficial and that neither company is controlled by the other," it said. "While the operating arrangement is undoubtedly beneficial to applicant, it is doubtful if the record would sustain findings that applicant is an independent operator and that its policies are not dictated by the officers of the incorporated company."

"On the other hand, the record appears to indicate that, except for different corporate nationalities, applicant and its

U. S. affiliated company may be considered for all practical purposes as a single corporate entity.

"It appears that the most obvious justification for the operation by the applicant of a service parallel with that operated by the incorporated company was and is to receive mail compensation from the Canadian government. The record is silent on the question of whether the Canadian postal authorities would share a portion of the expenses for the carriage of Canadian mail southbound by the incorporated company."

If CCA Ltd. carries out its plans to divorce itself entirely from Inc., the result would be "a competing foreign carrier, diverting revenue from, and otherwise operating against, the interests of a U. S. carrier," Forster said. Under these conditions Inc. would not be able to enjoy the economies under a joint operation and would probably require higher mail pay, he added.

"By reference to the arrangements between . . . Canada and the U. S. . . it is obvious that the Board is not under any international obligation to provide competition between a Canadian air carrier and a U. S. air carrier over this route," he stated.

Along the Lines

UNITED AIR LINES now has eight daily round trips between New York and Pacific coast cities, plus additional intercity schedules. There are 11 daily New York-Chicago round trips and 13 San Francisco-Los Angeles. The company is flying approximately 80,000 miles daily and states that there is a prospect that this will increase to 100,000 by mid-summer.

CONTINENTAL Air Lines recently inaugurated air mail service to Hutchinson, Kan., on AM43, Wichita-Pueblo.

EFFECTIVE May 15, Pan American Airways will increase Seattle-Juneau-Fairbanks service from two to four trips weekly with Lockheed Lodestar equipment. Juneau-Fairbanks local service with Electras will be increased from one to three trips weekly.

SERVICE BETWEEN Chicago and Traverse City was inaugurated May 1 by Pennsylvania-Central Airlines. This service will be operated between May 1 and Oct. 31 of each year. On May 2, the company placed DC-3 equipment into operation on its Detroit-Sault Ste. Marie route, replacing Boeing 247-D's.

NEW ROUND TRIPS added by American Airlines on Apr. 27 included: New York-Boston, New York-Springfield, Syracuse-Cleveland, New York-Chicago, New York-Buffalo, New York-Syracuse-Rochester-Buffalo, Cincinnati-Chicago, Cleveland-Cincinnati, New York-Washington and Memphis-Dallas-Ft. Worth.

AN AGREEMENT has been approved by the CAB under which American Air-

Obituary

MRS. GEORGE F. McLAUGHLIN, wife of the editor of *Aero Digest*, died in New York City on Apr. 18.

WILLIAM T. RANDALL, 57, Philadelphia sales engineer of Pangborn Corp., Hagerstown, Md., died on Apr. 14.

lines and Chicago & Southern establish the same schedule flying time between Chicago and St. Louis.

UNITED AIR LINES states that the 15th anniversary of the first privately contracted air mail route in the country was Apr. 6. The operation was that of Varney Air Lines, a predecessor division of United, between Pasco, Wash., and Elko, Nev., which began Apr. 6, 1926.

Dr. J. V. Price Appointed American's Asst. Surgeon



Dr. Price

He has a private surgery practice in Jackson Heights, L. I.

Dr. James V. Price, who for 18 years was a surgeon in Bolivia, has been appointed assistant flight surgeon for American Airlines at La Guardia Field, New York. One of his duties with American is to examine new flight crews and other employees.

X. Chicago & Southern Air Lines—Present and Proposed



THIS IS THE TENTH of a series of maps showing new routes sought by the major airlines in applications to the Civil Aeronautics Board. Chicago & Southern's present and proposed operations are shown above.

SUMMARY OF U. S. AIR TRANSPORT OPERATIONS FOR FEBRUARY

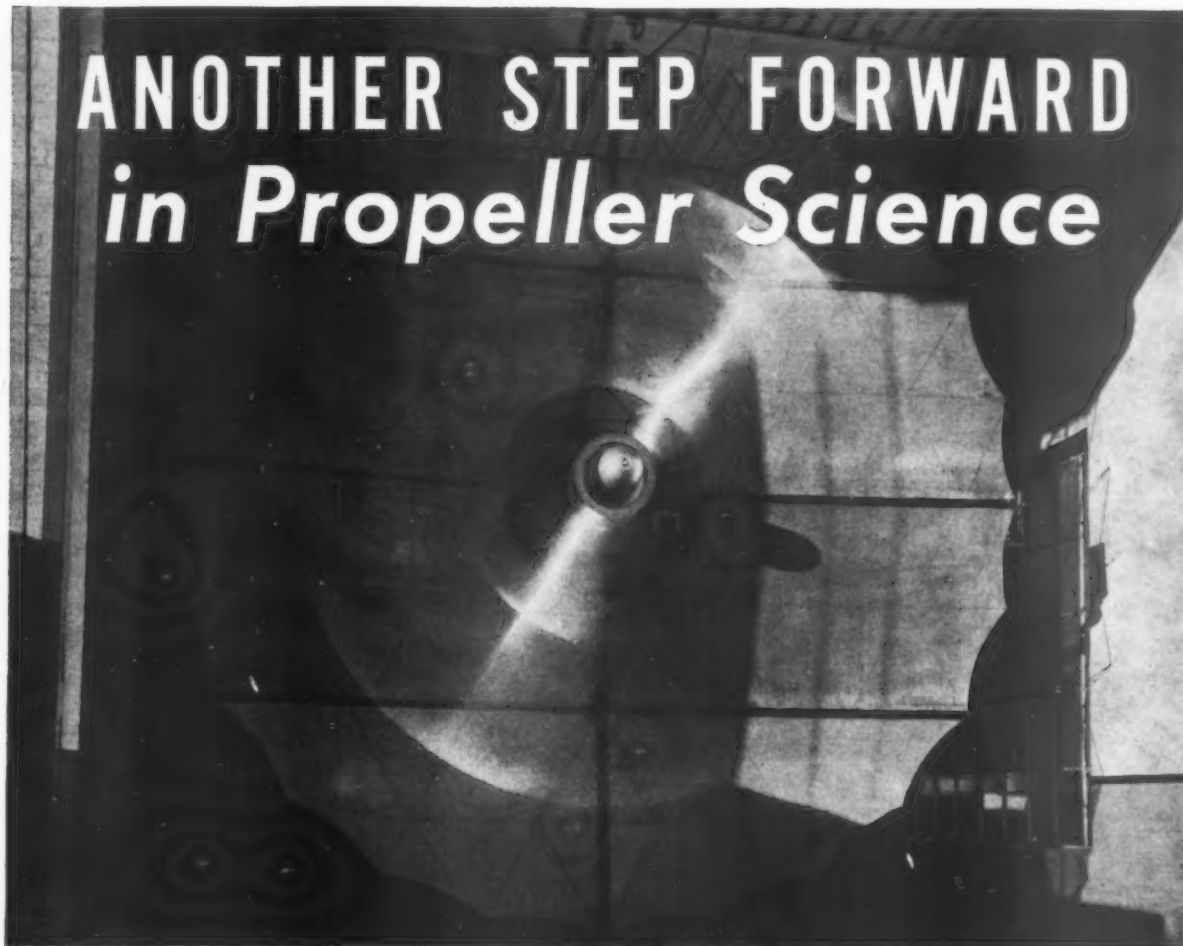
(Compiled by AMERICAN AVIATION from Reports to CAB a)

	Rev. Pass.	Rev. Plane Miles	Rev. Pass. Miles	Avail. Seat Miles	Pass. Load Factor	Planes Operated	Exp. & Frt. Lb.-Miles	Mail Lb.-Miles	Passenger Revenue	Mail Revenue	Exp. & Frt. Revenue	Operating Expense	Operating Income	Net Income Before Tax
All American	00	56,834	00	00	00	82,635	1,244,474	415,439,119	1,142,882	325,992	48,322	1,545,108	1,491,243	50,734
American	85,574	2,059,898	22,366,398	38,960,498	60.81%	81	185,803,977	48,283,681	128,442	62,318	3,418	195,891	241,108	43,731
Transit	5,682	380,683	9,914,348	6,414,015	45.44%	14	12,470,725	22,686	19,318	178	46,618	63,712	17,290	19,290
Canadian Colonial	1,687	81,422	493,310	1,079,562	45.70%	5c	624,786	3,850	00	112	4,063	8,970	4,814	7,944
Western	784	4,804	32,520	48,900	48.10%	2	276,310	00	00	00	00	00	00	00
Chicago & Southern	2,938	142,020	1,153,726	2,902,471	48.60%	5	8,839,710	20,549,206	92,494	32,810	2,186	87,970	98,889	10,919
Continental	1,106	102,703	356,864	1,028,660	34.69%	8	705,033	5,603,764	14,621	34,114	281	49,237	50,290	1,053
Delta	2,432	172,848	1,000,832	2,716,630	38.84%	19	3,700,428	17,618,089	44,018	33,306	884	87,927	209,538	23,033
Eastern	36,967	2,819,138	18,375,490	29,967,407	61.32%	43d	94,316,387	298,764,623	968,412	169,498	29,610	1,186,929	879,688	307,470
Northwest	811	81,287	201,525	812,670	24.79%	5	270,322	2,471,238	6,154	27,025	108	35,578	42,359	7,051
Inter-Island	2,844	40,873	411,258	586,075	70.10%	8	1,451,622	335,810	38,383	3,182	1,231	43,357	36,388	7,051
Mid-Continent	2,073	169,538	832,478	1,888,504	28.20%	8	1,148,399	10,058,288	24,120	60,851	464	86,108	101,100	17,697
National	3,476	133,248	944,804	1,712,094	88.19%	7	1,816,692	1,902,884	28,120	21,844	469	69,724	61,488	8,236
Northwest	2,312	122,929	368,508	950,120	38.79%	5	546,789	2,471,238	18,556	29,052	285	49,343	54,061	7,338
Southwest	9,961	432,923	2,705,063	8,887,722	31.14%	16	23,892,803	130,039,441	112,988	140,322	8,968	285,271	303,084	18,108
Transit	20,481	1,302,896	9,531,610	6,681,174	39.84%	19	13,632,606	29,458,998	45,564	45,564	4,517	307,764	281,164	26,600
Western	24,038	1,604,119	11,101,462	21,139,562	45.09%	43	97,338,941	311,175,888	478,198	314,529	28,230	729,950	1,027,398	297,687
United	2,070	198,881	868,000	2,888,110	30.99%	87	190,304,292	813,714,448	851,713	304,808	88,800	927,825	1,341,681	413,718
Totals	204,938	8,977,358	76,044,840	150,067,398	50.67%	360	630,748,698	1,883,974,191	\$3,846,063	\$1,582,968	\$187,148	\$8,722,166	\$9,381,134	\$636,386

All monthly reports to the CAB are subject to revision and year-end adjustment. Mail rate to be determined by hearing before CAB.

a Includes one rented plane. d Includes four rented planes.

ANOTHER STEP FORWARD in Propeller Science



UNTIL recently no satisfactory method had been found for locating and measuring aerodynamic and dynamic unbalance in propellers. Hamilton Standard experimental engineers now have found a way.

In testing for aerodynamic unbalance, a large wire-mesh disc is placed in the air current behind a rotating propeller. If the propeller is in perfect aerodynamic balance, this disc remains at rest. If not, the disc oscillates around a fixed axis, and its oscillations are indicated by instruments. From these instruments

the magnitude and angular position of unbalance can be determined.

In testing for dynamic unbalance, the propeller is rotated on a flexibly supported arbor. Motion of the arbor, caused by dynamic unbalance, is electrically measured by instruments which again reveal the amount and angle of unbalance.

This new experimental achievement, typical of Hamilton Standard's constant research and development, promises to improve still further the operating smoothness and reliability of propellers.

HAMILTON STANDARD PROPELLERS

EAST HARTFORD, CONNECTICUT

ONE OF THE THREE DIVISIONS OF UNITED AIRCRAFT CORPORATION

All Aboard for a WESTERN AIR Vacation

With foreign travel eliminated for the duration of the war, America's great national parks will be more popular than ever this year. No other transportation system serves as many of these vacation-lands as Western Air Lines which boasts of 16 national parks and monuments on or adjacent to its route.

Yellowstone. Direct service to West Yellowstone airport. Scenic side trip available to transcontinental passengers for only \$15 round trip from Salt Lake City.

Grand Tetons. Seen in all their majesty from Western Air Lines planes. Ground tours to this beautiful park and Jackson Hole from Idaho Falls or West Yellowstone.

Glacier Park. This magnificent park and its Canadian neighbor Waterton Lakes are served directly from Cut Bank, Montana, one hour by motor from park entrance.

Canadian Rockies. Banff, Lake Louise, Yoho, Kootenai and Jasper Parks are now easily reached via Western Air Lines and Trans-Canada Air Lines to Calgary, the eastern gateway to the Canadian Rockies.

Utah Parks. Zion, Bryce, Cedar Breaks and Grand Canyon North Rim are linked with a comprehensive system of ground tours. Served via Western Air Lines to Las Vegas.

Boulder Dam. Las Vegas, directly served by Western Air Lines, is the center of a vast recreational area which includes Boulder Dam, Lake Mead, Grand Canyon (by boat) and Death Valley.

California Parks. Southern California has three outstanding parks, Sequoia, King's Canyon and Yosemite. All are easily reached by Western Air Lines and United Air Lines to Fresno.

Dude Ranches—Fishing. Western Air Lines traverses the heart of the western dude ranch country. Along its route, too, is the nation's finest fishing and big game hunting.

Fastest Transport

(Continued from page 1)

duction order is on hand and production of parts has been under way for some time.

Development of the Constellation began two years ago with the greatest secrecy and not until late last fall did a few details begin to circulate through the industry. Publication by Pan American Airways of a statement in its 13th annual report that it has 40 of the planes on order was a general signal for "breaking" the story.

Non-stop flights across the U. S. in eight and one half hours will be easily possible with the new plane. A 10 to 12-hour trip to London will permit a round-trip within 24 hours. A 20 to 24-hour flight from Miami to Rio de Janeiro will be made possible.

It is reliably understood that Howard Hughes, motion picture producer, oil man, and holder of the round-the-world flight record, is the actual owner of the new plane and that the contract with Lockheed was arranged personally by Hughes without action by the board of directors of TWA. Pan American was subsequently invited to participate in the construction, thus cutting the per unit cost. Heaviest stockholder in TWA, Hughes was anxious, it is said, to provide TWA with transport leadership in the U. S.

It is understood that Hughes and Frye shopped around the manufacturing industry on the west coast for a builder and settled on Lockheed as being the logical plant. A closely guarded mock-up was built last year and has been seen by few outsiders. It is reported that Hughes and Frye had a secret entrance to the plant.

Lockheed shelved its plans to build its projected four-engined Excelsior landplane when Hughes and Frye turned the Constellation construction job over to that company.

Although the Priorities Board has given approval for the building of the prototype only, Washington officials are warming up to the Constellation as a valuable asset in time of emergency. Because of its vast carrying power and range, the Constellation will out-perform by far any transport plane now in the works.

The Constellation will be powered with four 2,500-hp. Wright engines, the largest radial engine so far available. One of the engines is reported to be in the Lockheed plant. The Constellation probably will be a proving ground for the new engines since the Army has no project far enough along for which engines of this horsepower can be used. The 10,000 hp. in the Constellation will be far greater than power used in any U. S. airplane.

The plane is of radically new design, with a tricycle landing gear, and many innovations gleaned from Hughes' experience in speed flights and long-range trips. Frye, who is one of the nation's outstanding airline pioneers and an operations expert, has also contributed numerous features.

The plane is designed for flying in the sub-stratosphere levels at

25,000 to 30,000 feet, with cabin supercharging that will retain a cabin pressure equal to normal flying levels of 8,000 to 12,000 feet.

Hughes and Frye, it is understood, anticipate that due to high speeds attained with a low percentage of power output flying costs will be reduced approximately 20% with a consequent reduction of fares.

Gross weight of the plane is 37 tons. Useful load is said to be 16½ tons or 33,000 lbs. Range of 5,000 miles will bring about revolutionary changes in air transportation, especially to points outside the U. S. The most distant point in the western hemisphere will be not over 24 hours away.

Although both Lockheed and TWA maintained complete silence on the plane, it is said that the entire fleet of 80 planes now on order could land a full division of men in Alaska or the Canal Zone in 36 hours, or put a division in Hawaii in 48 hours.

It is also said that the fleet of 80 planes could carry 10,000,000 pounds of cargo from Miami or New Orleans to the Canal Zone in 48 hours, or evacuate a city the size of Brownsville, Tex., in a single day.

The Constellation will operate at altitudes far beyond the range of anti-aircraft or attack planes.

In its annual report issued recently, Pan American Airways said the planes "of advanced design provide speed, range and carrying capacity superior to any transport aircraft known to be planned for production, either in this country or abroad."

It is said that the construction of the Constellation will in no way affect the program for production of military aircraft. The tools, dies, jigs, etc., used in its construction are of special design and cannot be used for building any other type of plane, and few, if any, of the construction facilities could be converted to military aircraft production. Furthermore, the feeling has grown in Washington that long-range transports capable of carrying troops are urgently desired.

The Constellation is TWA's answer to the Douglas DC-4 program undertaken jointly by the airlines. Pan American, while entering into the original program, did not order DC-4's, although Pan American-Grace Airways has done so. American, United, and Eastern have DC-4's on order.

This 40-passenger four-engined plane is now under construction at the Douglas Aircraft plant at Santa Monica, Cal., and the first plane is scheduled for test flying later this year. The DC-4, however, is not expected to have the speed, range and carrying power of the Constellation.

Frye has long been an advocate of long-range transport operations. TWA sponsored the development of the Boeing 307 Stratoliner, the first four-engined transport with supercharged cabin, and is currently flying five of these planes on its transcontinental line. Pan American has three of the Boeing 307's in operation in the Caribbean.

Develop Fast Transport



Howard Hughes



Jack Frye

Air Service Incorporated

Incorporation of Franklin Aviation Inc. a new enterprise which will conduct a flying school, ground school and sales and service station for aircraft at Franklin Airport, Toledo, O., was announced recently by Lou Gross, president. Dale Lapham, veteran Michigan pilot, is vice-president and operations manager of the company.

The firm, which has purchased equipment for charter and passenger sight-seeing flights, plans to inaugurate an aerial taxi service between Franklin Airport and Toledo Municipal Airport when transcontinental airline service is resumed from the city.

Agency Changes Name

West-Marquis Inc. is the new name of West & Associates Inc., Architects Bldg., Los Angeles, Cal., it was announced recently.

The firm handles the accounts of Aircraft Associates, Aero Industries Technical Institute, American School of Aircraft Instruments, United Flying Schools of America, Harvill Aircraft Die Casting Corp., Harvey Machine Co., Aircraft Tools Inc. and Pacific Aviation Club.

School Plans New Building

The William R. Moore School of Technology, Memphis, Tenn., has announced plans for a new \$40,000 shop building which will permit the addition of courses in aircraft mechanics to its curriculum. New unit will include about 5,000 sq. ft. of floor area.

Production Swings Ahead

The production curve for Sperry Gyro-Horizons and Directional Gyros shows at a glance how Sperry is responding to the heavy demands for these important instruments. The ever increasing requirements of the national defense program, together with commercial orders, make it imperative that this curve swing upward faster than ever before.

Sperry is now producing Gyro-Horizons and Directional Gyros at the rate of more than 5,000 units per month - more in one month than the entire output of 1938.

1932	1933	1934	1935	1936	1937	1938	1939	1940	1941
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SPERRY GYROSCOPE COMPANY, INCORPORATED
BROOKLYN NEW YORK

AIR CARRIER RECORD

C.A.B. APPLICATIONS, HEARINGS, DOCKETS

APPLICATIONS

Delta Air Corp. has filed application for extension of AM24 from the intermediate point Columbia, S. C., to Knoxville via Charlotte and Asheville and/or Columbia-Knoxville via Spartanburg, Greenville and Asheville.

Canadian Colonial Airways is seeking a temporary certificate for a New York-Nassau operation. Complete story on page 14.

Eastern Air Lines on Apr. 29 filed applications for three new routes covering 1,499 miles. Complete story on page 14.

Pennsylvania-Central Airlines has filed application for inclusion of Baltimore as an intermediate stop on AM14, Norfolk-Detroit, and for the consolidation of its unnumbered passenger-property Pittsburgh-Baltimore route with AM14.

American Airlines has filed applications for a stop at New London, Conn., on AM18 and a stop at Worcester, Mass., on AM18 and 21.

W. R. Grace & Co. will file application for a New Orleans-Cristobal and/or Balboa route. Complete story on page 20.

HEARINGS AND ORAL ARGUMENTS

UAL-TWA-WAL Hearing Opens

Hearing had opened as this issue went to press on TWA's applications for Los Angeles-San Francisco, amendment to AM37 to include Los Angeles, for mail service into Oakland; United's application to include Visalia, Merced, Modesto, and Stockton on AM11, and on Western Air Lines' applications for El Centro-Los Angeles, Los Angeles-San Francisco, Los Angeles-San Francisco-Sacramento, and to include San Bernardino on AM13.

Pan Am Rate Case Continues

CAB investigation into the air mail rates being paid Pan American Airways Inc. on its Latin American routes continued during the past two weeks. Complete story on page 22.

Delta Rate Case Heard

Hearing was held in Washington recently on air mail rates being paid Delta Air Corp. Complete story on this page.

TACA Hearing Concludes

Hearing was held Apr. 25-May 5 on application of American Export Airlines for permission to purchase TACA. Complete story on page 20.

PAA—Export Battle Opens

CAB Examiner Thomas Wrenn opened hearing May 2 on applications of Pan American Airways and American Export Airlines for routes from New Orleans to Latin America.

CAB DECISIONS

PAA Gets Singapore

Pan American Airways has been granted an extension of its trans-Pacific operation from Manila to Singapore. Complete story on page 20.

3 U. S.-Canada Routes Awarded

Three new routes between the U. S. and Canada were awarded by CAB and approved by the President. Complete story on page 16.

EAL Birmingham Order Reaffirmed

CAB on Apr. 25 reaffirmed its order of Jan. 30 granting Eastern Air Lines a stop at Birmingham on AM5 with the condition that the city be served only on flights originating and terminating at New Orleans or points beyond and at Washington or points beyond on AM5.

Birmingham-New Orleans Non-stop Approved

Inauguration of non-stop service between Birmingham and New Orleans by Eastern Air Lines on AM5 will not adversely affect the public interest, CAB ruled Apr. 25.

Inland Denied Alliance Stop

Inland Air Lines has been denied a stop at Alliance, Neb., on AM35.

TWA Gets Reading; UAL Refused

CAB on May 5 awarded TWA a stop at Reading, Pa., on AM2 and denied United Air Lines a stop at the same point. "A study of statistical data of record indicates that there is a greater community of interest and resultant flow of traffic between Reading and cities served by TWA than between Reading and cities served by United," CAB said.

EXAMINERS REPORTS

CCA Ltd. Not Required, Examiner Says

Operation of Canadian Colonial Airways Ltd. between Montreal and New York is not required by the public interest, CAB Examiner Alfred Forster said in a proposed report on Apr. 25. Complete story on page 30.

MISCELLANEOUS

Catalina Directorates Approved

CAB has approved interlocking directorates involving W. J. Scott as controller of Catalina Air Transport, Wilmington Transportation Co., and Santa Catalina Island Co., and has approved Woodward M. Taylor as director of the same three companies.

C&S, AA, Ask Intervention

American Airlines and Chicago & Southern are seeking to intervene in applications filed by Mercury Development Corp. for air mail pick-up routes.

TWA Seeks Intervention

TWA has asked permission to intervene in applications of United Air Lines for a stop at Milwaukee on AM1 and for a Denver-Los Angeles route.

AA Exempted

American Airlines has been exempted from the provisions of the Civil Aeronautics Act so that it may engage in air transportation between Hartford, Conn., and points on AM21 west of Hartford "during such time as the air carrier operating certificate together with the operations specifications of American . . . do not authorize it to serve Springfield . . ."

PCA Allowed Saginaw-Bay City Suspension

Pennsylvania-Central Airlines has been authorized to suspend service at Saginaw-Bay City, Mich., for 60 days from May 1. The airport is not suitable for DC-3 operation, it is said.

IN THE Sales & Traffic OFFICE

William L. Timbers, formerly with Kansas City Southern Airlines, was recently named manager of surface transportation relations for United.

David W. Campbell, formerly supervisor of reservation salesmen at Dallas for American, is now chief reservations agent at Burbank.

Fred J. Martin, agency representative of Pan American in New York, has been transferred to Seattle as district sales manager.

Newly employed reservations sales personnel of United include L. I. Kiely and F. B. Hammond at New York; K. D. Walsh and N. D. Zech, Cleveland; William D. Jameson, V. Garrity, E. E. Van Horn and G. Carpenter, Chicago; E. F. Allery and R. Julian Lloyd, Denver; M. Adamson, Salt Lake; B. V. Birdsey, N. C. Wade, M. E. Hogarth and A. J. Smith, Los Angeles; Y. S. Mosen, F. J. Wilkinson, W. Watson, N. R. Milbank and Tex A. Boswell, San Francisco; L. Sjolander and M. B. Clasper, Portland, and G. Warren Averill and J. E. Dunnavan, Seattle.



Shubert

Bruce Shubert, who has been with Northwest at Chicago and Seattle, has been appointed to the staff of the company's city ticket office at Minneapolis. He will work under the direction of Franklin Armstrong, dtm.

James Doyle, Edward Hendrickson and Ellis Hallin have been assigned to Northwest's reservations department at Minneapolis airport. A new ticket agent, H. Kircaldie, was named at Milwaukee, and James Speers was transferred from Chicago airport space control division to the NWA Chicago city ticket office. Harley Christensen was transferred from Seattle to Tacoma, and Russell Marsh from Spokane to St. Paul.

Robert Barber has been named manager of UAL's tour department in the NY traffic office, replacing Foster Knight, who was conscripted. Joe Terry, a New York City travel agent since 1919, has been appointed assistant to J. Herman Theilig, manager of American's agency and foreign department. Jack A. Tompkins, Theilig's former assistant, has been promoted to assistant district sales manager at Chicago.



Ingrid Flakstad, left, and Anne Medvesek, right, have been appointed to Northwest's Seattle city ticket office staff. Both are graduates of the University of Washington.

Nicholas J. Murphy has been assigned to Pan American's traffic department at Dinner Key, Miami.

Northwest has transferred Russell C. Marsh from Spokane to the St. Paul district traffic office. Company has also named K. Sullivan ticket agent at Butte.

New Penn-Central apprentice agents are: E. A. Davis, Akron; D. W. Espy, Baltimore; Owen F. Williams, Birmingham; H. E. Saxton, Chicago; R. Lein-

CAB Hearing Held on Delta's Mail Rates

HEARING was held in Washington Apr. 28-29 before CAB Examiner Thomas L. Wrenn on CAB investigation into the air mail rates being paid to Delta Air Corp.

As a result of the hearing, CAB will decide fair and reasonable rates for the company's AM24, Charleston-Ft. Worth, Augusta-Savannah, and will set a rate for the new AM54, Atlanta-Cincinnati.

Delta's witnesses at the hearing included L. B. Judd, chief accountant; Laigh C. Parker, vice president-traffic; and C. E. Woolman, vice president-general manager.

Testimony developed that for the period July 1, 1940, to Jan. 31, 1941, Delta received passenger revenue of 26.78c per mile on AM24, not including the Augusta-Savannah extension, and for the next eight months estimates a 10% increase. The company expects to carry an average of three passengers per revenue-mile Augusta-Savannah, and four on Atlanta-Cincinnati in the next eight months.

After conclusion of these eight months, Delta expects a 20% increase in AM24 non-mail revenue and a 60% increase in the extension and on AM54. These estimates cover the 12 months starting at conclusion of the eight months.

Parker stated that Delta is feeling the effects of competition from the entry of Eastern Air Lines into Birmingham, and commented on EAL's "lack of co-operation" at that point. EAL, he said, had failed to establish connections with Delta's more important schedules at Birmingham. Chicago & Southern's new route through Shreveport will also compete, he added.

Jean C. Brawner, head analyst in CAB's economic bureau, testified that Delta's base rate as set by the Interstate Commerce Commission was 29c per mile with base mileage of 105,000 miles per month. However, during the 12 months ended Dec. 31, 1940, the company flew in excess of this mileage and therefore received 26.19c, he said. If Delta had been paid on the basis of all revenue miles flown, it would have received 19.67c, he added.

inger, B. L. Mathis, N. L. Wood and Vernon Govier, Cleveland; F. L. Goodell, Norman Egger and D. W. Ireland, Detroit; Dayton Brown, Grand Rapids; D. T. Snow, Greensboro; D. W. Townsend, Hickory; C. H. Taylor, Lansing; W. D. Smith, Norfolk; M. M. Wadlow, T. M. Mittelhauser and D. W. Unger, Pittsburgh; D. S. Sumrell, Rocky Mount; M. Darlington, E. W. Mansfield, Max Barry, L. J. Cafferty and J. H. Hayes, Washington.

AIRLINE Operation and Maintenance

Wearing their first officers' stripes for American are Charles Evans at Ft. Worth, Edward Cycon and Charles B. Andrews both at NY.

New employees in Pan Am's eastern division communications are Leopold Guzowski, Stephen Marcycki, Winfield Bemis and Arthur B. Thompson, all based at Miami. Based at San Juan are Jose A. Fernandez as apprentice airport operator, and Julia Belber and William C. Werner as airport operators.

Charles Tuma has been promoted from mechanic to senior mechanic on line maintenance at American's NY base. George Bell, formerly senior mechanic at NY, is now stationed at Detroit in the same position.

Ralph Kistler Jr., Rosmond E. Blavett and Samuel H. Giberson are new student pilots at American's NY pilot training school. Student pilots transferred from NY to Ft. Worth are Wayne Rutherford, Vernon Brown, Frederick G. Chambers and John Jenkins.

Panair do Brasil (Pan Am) has added Capt. Afonso Celso Parreira, Lt. Milton Castro, Lt. Maurice Ash Jatahy and Lt. Delio Jardim de Mello as junior pilots.

New

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New Direction Finder Demonstrated; Braniff Announces Installation



THE DUAL automatic radio direction finder, an important radio development enabling navigation in the "air ocean" rather than along range courses, was demonstrated recently on an 11,000-mile tour by the Civil Aeronautics Administration's Douglas DC-3 "laboratory" ship.

Braniff Airways has announced it will become the first U. S. airline to install the equipment on its planes. Installation will begin about June 1. The equipment is being manufactured for Braniff by Sperry Gyroscope Co. at a cost of \$36,850.

The above picture shows the azimuth indicator (round instrument with two needles midway between control wheels and above throttle knobs) of the dual automatic direction finder installed in the CAA ship.

Each of the needles is actuated by one direction finder and these are tuned by the two light-colored boxes, center above. The needle points continuously toward the station to which its receiver is tuned. Thus, when one finder is tuned to a station ahead and one to a station behind, the pilot can fly a straight course between the two stations by keeping the needle in a straight line across the indicator. The direction finders can be tuned to broadcast or radio range stations.

CAA states that the instrument is a "development of the last three years by radio engineers of the CAA and three manufacturers in collaboration." The three manufacturers will soon have the instrument on the market, it was indicated.

Simplified Radio Control Panel



CONTRASTED with an average of 18 switches on the master radio control panel of transport planes, the panel (oblong white box) shown above in the Civil Aeronautics Administration's "laboratory" plane, has but five. Developed by CAA radio technicians, the panel is mounted above the plane's windshield, and controls all radio equipment in the CAA plane as well as equipment already standard on transports. The two gray knobs, upper left and right, rotate the loop antennae of the new dual automatic direction finder. The two toggle switches fastened together are the off-on switches for the plane's transmitters and for connecting the microphones in the plane's cabin with the pilot's broadcasts. Black knob is a rheostat for controlling illumination on the azimuth indicator of the director finder; the single toggle switch is the master, turning on power for all radio equipment. Below, the two switches with ears are the function selector switches for the two receivers of the direction finder. The black switch, center, below, is for automatic selection of the frequencies on which the pilot desires to broadcast and listen. Other panels show regular transport equipment.

KEYED TO THE NATION'S NEED FOR SPEED 5 DAILY COAST-TO-COAST FLIGHTS



Over the shortest, fastest, coast-to-coast air route, TWA offers the convenience of *five daily flights*. It's only 13 hours, 40 minutes from Los Angeles to New York—only 15 hours, 8 minutes from New York to Los Angeles when you travel aboard the "Super Sky Chief," TWA Stratoliner—*fastest of all transcontinental flights*. With these unequalled coast-to-coast schedules, TWA offers frequent, convenient commuter service between the nation's industrial centers.

Ask your travel agent or
TWA Representative for
complete information.

ROUTE OF THE STRATOLINERS **TWA**
The TRANSCONTINENTAL
airline

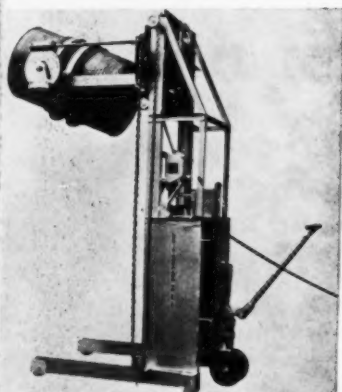
TRANSCONTINENTAL & WESTERN AIR, INC.

MAINTENANCE AND MANUFACTURERS

Product News

BY E.J.F. PROD. NEWS
EDITOR

OF PARTICULAR INTEREST to airlines where flight time, engine and accessory times are of importance is the new Underwood-Sundstrand Adding-Figuring Machine built by Underwood Elliott Fisher Co., 1 Park Ave., New York. Equipped with the familiar 10-key keyboard, this machine adds or subtracts in 60th fractions for figuring hours and minutes or minutes and seconds. Considerable versatility of application is permitted by the use of an extra key which disconnects the 60th feature and allows standard decimal operation.



ILLUSTRATED ABOVE is the new type of Drum Dumping Stacker as offered by Lewis-Shepard Sales Corp., 245 Walnut St., Watertown, Mass., for handling the dumping of drums, barrels or other material containers. This improved type, in addition to offering all the features of the standard Master Stackers, is said to permit the control of the dumping operation by the operator from the floor. This should eliminate the need for standing on boxes or improvised platforms. A self-locking worm makes it possible to hold the drum for as long as desired at any position. Control from the floor permits the operator to reverse the tilt of the container and thus, to slow down or stop the flow of the material.

IT IS SAID that the Kolok Process, a recent development of United States Rubber Co., Rockefeller Center, New York, N. Y., will double the life of textiles ranging from wool socks to aircraft upholstery or wall paneling fabrics. The process serves to materially lengthen fabric life by reducing internal friction of the individual fibers one upon the other. It is reported that this friction reduction is accomplished by the impregnation of the material with a special rubbery solution. It is further claimed that this treatment minimizes shrinkage, discourages moths and reduces wrinkling.

(Editor's Note: We are wondering if this process may offer a possible solution to the problem of using glass cloth in aircraft interiors. The major objection to the glass cloth has been that its life is very short because of the friction of the tiny glass "rods" within the fabric. Could the Kolok Process be applied to this type of material and would it lengthen life?)

LATEST IN THE LINE of Granco pumps, manufactured by Granber Equipment Inc., Oakland, Cal., is the Model HHF Transport pump which is rated at from 50 gallons per minute at 100 rpm. to 200 gallons per minute at 400 rpm. This unit was specifically designed to meet the need for high speed

refueling of aircraft and for the speedy transmission of such fluids as high-octane gasoline and light solvents. A self priming unit, the HHF has no gears, blades, scoops, cams, washers or dragging motion; friction is minimized since the rotor is pivoted in the housing and does not touch it. The fluid is moved by a "squeezing action." Two 3" suction and two 2½" discharge ports are provided; suction ports are horizontal, discharge are vertical. Rotational direction of the pump dictates the use of either one of the pairs of ports. A built-in relief valve is provided and is adjustable from outside the pump; it is claimed to be shatter-proof. Shaft alignment is made permanent by the inclusion of an outboard ball bearing. The pump weighs 150 pounds and is less than a foot in both height and width.

EQUIPPED WITH U. S. Army Air Corps standard pads, power take-offs and electrical connections, a new line of DC motors, 1/100 to 3 hp. for aircraft application, has been introduced by Air Associates Inc., Bendix, N. J. Details of construction are as follows: Magnesium housings; shaft ball-bearings; fiber glass insulation impregnated with heat-resisting varnish; radio shielded; explosion-proof, internal fan or forced draft; 6, 12 or 24-volt circuit for continuous or intermittent operation; series or shunt wound. Landing gears, transfer pumps, wing flaps or anti-icing pumps are said to be typical possible applications. To meet commercial requirements, special shaft fittings or electrical connections can be supplied.

LOW PLATFORM Airplane Scale is the trade-name of a new model introduced by Howe Scale Co., 1041 Scale Ave., Rutland, Vt. Equipped with a ramp to permit wheeling of the airplane into weighing position, the scale has a capacity of 5,000 pounds. The beam graduations are single pounds to 200 pounds and 200-pound increments are employed throughout the rest of the range. Castered at the ramp end of the platform, the unit may be made easily portable through the use of one of the company's lift jack hooks on the beam end of the platform. In weighing position, the platform is said to be only three inches above the floor or ground; leveling screws are installed at each of the four corners. Platform size is 36" by 48".

LEAR AVIA Inc., Dayton, O., introduces a remote-control aircraft trailing antenna reel. It is said that the reel will pay out any predetermined length of antenna; automatic retraction before landing may be realized by connection of the reel's controlling mechanism to the throttles, retractable landing gear or wing flaps. A bobbin, motor-drive unit and housing go to make up the assembly. The drive unit is one of the company's motors which uses a magnetic clutch and brake mechanism for engagement and release. The housing is made of fabric-base Synthene with a resin-varnish laminating vehicle. It is claimed that the tensile strength and other physical properties of the housing permit the assembly to absorb the vibration as well as the drag of the weighted antenna. 12,000-volt electrical breakdown tests have been withstood by the unit.

PRECISION TELESCOPIC systems which have contributed to medical science over a period of years are now offered for industrial applications by American Cystoscope Makers Inc., 1241 Lafayette Ave., New York, N. Y. The Wappler Industrial Telescope by illumination and a lens system is said to permit the accurate and detailed inspection

of the inside of holes or tubes and other hard-to-get-at places. Four types of instruments available are: "for-oblique" which illuminates forward and to an angle of about 45 degrees with the longitudinal axis of the telescopic tube; "right angle," which permits the inspection of the area at right angles to the tube; "direct," illuminates and permits telescopic viewing of a symmetrical area directly ahead of the tube and "retrospective" which, as the name implies, permits "looking back" from the tube end.

AVAILABLE WITH either air or electric motors and with either 30 or 60 gallon containers, small paint-circulating systems for finishing-room use are offered by DeVilbiss Co., Toledo, O. These systems supply a maximum of six production guns handling any such materials as synthetic enamels, paints, varnishes, shellacs and lacquers. The motor-speed reducer-pump combination is mounted directly on the lid of the tank on a small platform; to assure longer pump life, a mechanical seal replaces the ordinary packing gland. System A, using a minimum internal diameter of ½", will deliver fluid over a loop of not more than 200 feet; System B uses an internal diameter of ¾" minimum and the loop can be 450 feet long. For materials difficult to keep in suspension, System C permits the recirculation of the fluid through the head of each gun.

SAID TO PRODUCE two and one-half times the light intensity of an incandescent lamp of the same power, the Engineers Fluorescent North'm Lite has just been introduced by Frederick Post Co., Box 803, Chicago, Ill. It is designed to balance the heavy blue fluorescent lamp light and to give a neutrally colorless light that claims to make eye work quicker and easier. Height of the lamp above the drawing table may be varied up to 24 inches; the shade is vertically adjustable through a range of 180 degrees and horizontally through an arc of 360 degrees. A specially pigment-treated reflector is used to give the "north daylight." Model 2224A may be clamp-fastened to the drawing surface; 2224B provides a permanent screw-anchor attachment.



ECLIPSE AIR BRUSH Co. Inc., 400 Park Ave., Newark, N. J., announces the metal ring guard, illustrated above, for use on its Portable Pneumix air-motored agitators. This metal ring acts as a stand providing an easy means of storing the agitator inasmuch as it eliminates the necessity for suspending the mixer when not in use. The four supports that hold

the ring also serve to protect the shaft and prevent its getting out of alignment. The ring itself protects the propeller from contact with the mixing vessel. The addition of the guard, according to the manufacturer's claims, does not in any way affect the performance of the line of mixers: fire-proof and explosion-proof at any speed up to 6000 rpm.



THE PRESENT WAR has indicated the need for a special spark plug to be used in stratosphere flight with the much higher output engines being developed. It is claimed that the A-C Division of General Motors Corp. has made an important contribution toward filling this need by the introduction of their new type plug for aircraft use. Above is an illustration of the inspection of the new plug. This spark plug is said to function efficiently at altitudes and in the high output engines; the U. S. government and engine manufacturers have been taking the entire output. The plug is new in design and material; its ceramic insulator is next to the diamond in hardness.

NEW EASE in cleaning the interiors of commercial aircraft is claimed for the recently introduced Sparton Vibromatic Cleaner, made by Sparks-Withington Co., Jackson, Mich. Heretofore, it has been considered undesirable or even dangerous in many cases to use the conventional type cleaning machine in the ships or hangars because of the possibility of electric motor sparks in an atmosphere of gasoline fumes. The Sparton Vibromatic, operating entirely on compressed air pressure, transforms the steady air pressure into a beating, pulsating vibration. It is said that this vibration will effectively break up and remove all dust, dirt and sand from floors, upholstery or decorations. The unit can be operated from any standard air outlet. Complete with cloth receiving bag, extension tubing, high pressure hose and attachments for removing water and cleaning fluids, the Vibromatic retails for \$20.75.

BY STRETCHING a seamless Neoprene tube between an outer and an inner tube of stainless steel and permitting the Neoprene to then resume its initial condition, Harris Products Co., 5424 Commonwealth Ave., Detroit, Mich., provides a mechanical bond between the two materials by radial pressure. This method of manufacture is said to make possible ratings of 150 pounds per square inch axial load for the company's new line of "Torflex" engine and cow shock mounts. It is claimed that this process permits the low cost manufacture of special sizes or small lots. The use of Neoprene provides resistance

RCA's portable receiver for reports, report control to standard unit, production of Camden, tained dry DC electricity less battery AVR-102.

Lear announced way porta

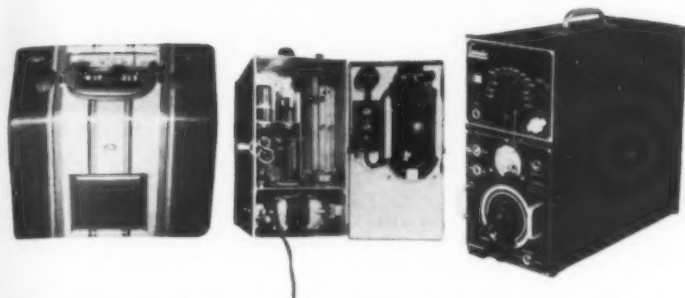
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RCA and Lear Portable Radios



RCA's NEW THREE-WAY aviation portable radio, at left, is an efficient receiver for bringing in CAA weather reports, radio range courses, and airport control tower signals, in addition to standard broadcast programs. The unit, produced by the aviation radio section of RCA Manufacturing Co., Camden, N. J., operates on self-contained dry batteries, or from an AC or DC electric outlet. List price is \$39.95, less batteries. It is designed as Model AVR-102.

Lear Avia Inc., Dayton, O., has announced development of a new two-way portable radio, originally designed

against either oil or ozone at high altitudes and the stainless steel resists the salt-water air corrosive effect that may be present at lower altitudes.

"SELF-SEALING Couplings" offered by Aeroquip Corp., 303 S. East Ave., Jackson, Mich., permit aircraft fluid-carrying lines to be disconnected and reconnected at any point where they are applied in the system without fluid loss and without the application of either shut-off or check valves. These couplings manufactured in sizes for $\frac{1}{4}$ " to $1\frac{1}{2}$ " tubes are supplied with standard 811 Air Corps and fittings. Riveting or bolting flanges permit bulkhead-type attachment on firewalls or similar sections. Backing-off of the union nut releases both right and left-hand springs which actuate two inner valves, seating them against flanges, thus sealing both ends of the separated line.

ANDREWS AND PETRILLO Inc., Long Island City, N. Y., will be the manufacturers and marketers of a rivet-sorter that has been developed by Glenn L. Martin Co. Said to be particularly applicable to aircraft factories where appreciable amounts of rivets accumulate on the shop floors in the course of the day, the machine permits efficient, high-speed reclamation of these rivets. It automatically separates and sorts all rivets delivered to it according to length, type of head and diameter.

Literature Available

Blackhawk Manufacturing Co., Milwaukee, Wis., has issued a new 40-page catalog featuring 1941 developments in socket, boxtype, tension, and specialty wrenches for industrial, construction, and aviation fields.

Caterpillar Tractor Co., Peoria, Ill., has issued a 36-page, two-color catalog (Form 6425), listing the more than 50 products manufactured by the company.

Chicago Metal Hose Corp., Maywood, Ill., has published a portfolio, No. AG-77, covering flexible connections, conduit, and fittings for aircraft.

Chicago Rivet & Machine Co., 1830 S. 54th Ave., Chicago, Ill., signaling its entrance into the aircraft industry, has published a 16-page brochure illustrating four models of automatic riveting machines designed for setting aircraft rivets.

Federal Telegraph Co., 200 Mt. Pleasant Ave., Newark, N. J., is distributing literature on its multi-unit radio transmitting equipment.

G & N Manufacturing Co., 11610 Madison Ave., Cleveland, O., has prepared a catalog containing photodiagrams and specifications on its die-casting machines.

for military use and now adapted for commercial and export uses. Center photo shows the method of storage of microphone and telegraph key inside of hinged back door. At right is an illustration of the control panel of the new unit, known as Learadio Model TRM-204. The unit operates in the 3000-6000 kcs. band, and provides a definite means of communication between a ground station and aircraft in flight. Only installation provisions necessary are an antenna and a 12-volt DC supply. Unit is comprised of a small 10-watt transmitter and a companion receiver, both housed in a single carrying case.

End Loading Unit Ups Fixed Antenna Range

To increase transmitting range of fixed aircraft antenna used with low power transmitting equipment. Air Associates Inc., Bendix, N. J., has developed an antenna end loading unit (AR-6) which combines the functions of a loading coil



and antenna insulator. Its mounting position at the open end of the antenna enables the end loading unit to perform the double duty of a loading coil and antenna insulator.

Advantages of the end loading unit in conjunction with a fixed antenna, over a reel or training antenna include, according to the manufacturer: Greatly reduced initial and installation cost, weight only a fraction of reel system, and no need for reeling antenna in and out. Transmitting radiation efficiency is said to compare favorably with the trailing wire antenna.

Western Electric Designs Compact Radio Receiver

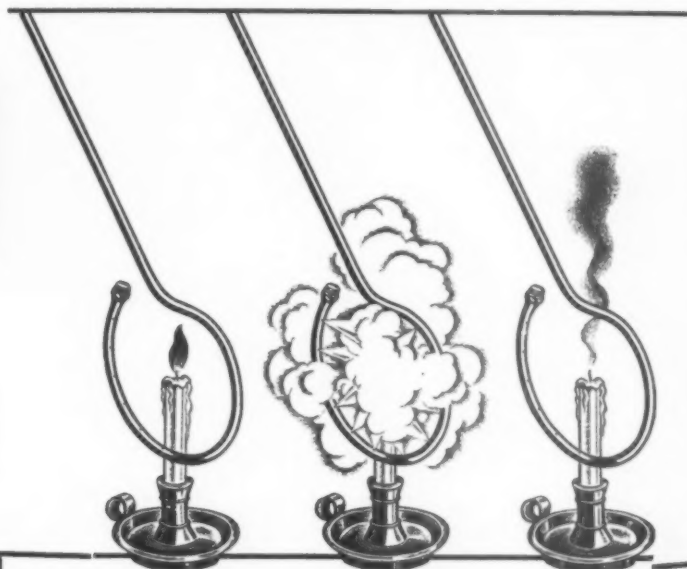
A two-unit midsize aircraft radio receiver which also serves as an interphone has been designed by Western Electric Co. The new instrument, known as the 33-A radio receiver, may be tuned continuously or operated as a crystal controlled unit on two "spot" frequencies.

The radio frequency unit of the receiver, containing all the controls, is designed to mount near the pilot or operator. The audio-power unit may be installed anywhere in the plane, base down, within the limits imposed by the interconnecting cable and battery cable. This unit comprises the intermediate frequency amplifier and second detector, together with the continuous wave oscillator, audio-frequency amplifier and dynamotor power supply.

The apparatus weighs 18 lbs. 7 oz. complete with crystal equipment.

Hancock Resigns at PT

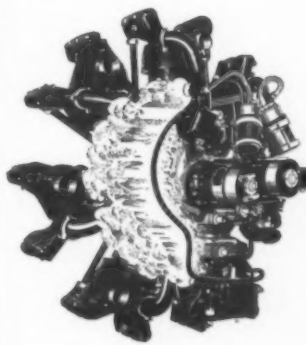
Robert H. Hancock, superintendent of maintenance of Allegheny County Municipal Airport, Pittsburgh, since 1931, resigned recently to become a ground school instructor with Graham Aviation Co.



Get a Stranglehold on Fire with

The RING OF PROTECTION!

It's as easy, nowadays, to kill an engine fire as it is to unsnap your safety belt. A quick pull, or the turn of a valve, and fire is doomed to a 3-second death.



• A slender metal ring does the trick... a ring in the engine compartment harnessed to a small cylinder of carbon dioxide. It strangles fire in a fast-expanding cloud of carbon dioxide snow-and-gas that penetrates to every inch of space where fire may lurk. That's how LUX Built-In Extinguishing Systems guard against engine blazes.

LUX Flame Detectors give instant alarm. A directional valve on multi-engined planes enables pilot to flood with LUX gas any motor which is in distress.

Do you have all information on LUX Built-In Systems? Write today for your free copy of "White Magic."

MOBILE FIRE FIGHTER FOR SMALL AIRPORTS

This little trailer carries a big fire-fighting wallop—six 50-lb. cylinders of carbon dioxide, 100 ft. hose and special nozzle, 4 portables for small fires. A brand new development in airport fire control. Write for information.



Walter Kidde & Company INCORPORATED

539 West Street, Bloomfield, N. J.



Americanization of Latin American

(Continued from page 3)

well integrated local feeder airlines, and to extend the routes and step up the frequency of our international air carriers operating south of the Rio Grande. . .

"Our first line of national defense is on those fronts in Europe, Africa and China which are being so gallantly defended. However, while we concentrate our greater effort behind this first line, we must not neglect our second line against which the same anti-democratic forces, using different tactics, are assiduously driving.

"The quickest, surest way to make ineffectual the Axis strategy of infiltration, and eventual economic, cultural and possibly political subjugation of the Americas, is to hasten the speedy realization of an all-around hemisphere inter-relationship which is contemplated by the purely democratic and unselfish 'Good Neighbor' policy.

"This can best be achieved through our unstinted assistance to Latin American airline development."

Today, Taylor said, an initial investment of less than \$10,000,000 and about 40 planes will meet the immediate requirements. "It is estimated that there are now about 114 transport planes in Latin America, exclusive of those used by our international lines. About 60% or 68 of these are of American make, leaving about 46 planes of European origin."

Within the next few years, he said, we should allocate about \$100,000,000 to support the expansion of U. S. airlines offering main-line services throughout the Americas and, without exerting control, provide the means for expansion of locally owned and operated feeder air transport systems in proportion to the needs of every South and Central American state.

"Since the German and Italian governments, even in the midst of war, find it of sufficient value to their national interests to continue pumping aviation subsidies into South America, our government must be awakened, in time, to the



There is no substitute for TIME—the most vital ingredient in national defense preparation. It is inelastic, limited, and highly perishable. Air transportation, however, is actually helping to create a new supply of time by enabling men to make more efficient use of it—saving hours of travel time and expediting the conduct of their businesses.

AMERICAN AIRLINES Inc.

ROUTE OF THE FLAGSHIPS

Taylorcraft at Alliance



COMPLETION OF A \$200,000 expansion project of Taylorcraft Aviation Corp. raises the company's productive capacity of lightplanes at Alliance, O., more than 300%. In four years Taylorcraft has grown to second place in sales and production of lightplanes and has increased its payroll from eight men to 140.

fact that we are fully justified in doing the bigger job which is so easily within our power.

"Specifically, we advocate, and this thinking is not without authority, that we 'lease-lend' whatever is necessary — be it \$100,000,000 or \$200,000,000—to accomplish, with the least delay, the Americanization and fullest possible expansion of commercial aviation in this hemisphere.

"If any consideration is to be given to the future of aviation—our principal defense industry—we are already rather late in making a start. While Latin America cannot, at best, offer sufficient business to sustain an extensive part of our augmented productive capacity, still a Latin America which aviation-wise is all American will be a most useful illustration, beyond our borders, of what can be accomplished through the use of our equipment and experience.

"This should help to reopen to our producers and operators a great many other markets which might otherwise be turned into dumping grounds for remodeled bombers and out-moded transports which, at low cost, will be rolling off European production lines after the war.

"When a military pilot goes aloft he takes his parachute along with him. He hasn't time to manufacture one after he gets into trouble; the same is true of our aviation industry on which we have placed so much dependence—when the bottom falls out of this military demand for planes and allied equipment, then, if you want to keep turning the productive machinery, built up latterly at great public expense, you will have to provide the 'parachute'—commercial business—in advance."

In conclusion Taylor summarized the task as follows:

First, there must be a recognition by our government of the defense necessity of providing against the further aviation aggression of the Americas by Axis powers.

Second, our operators must subordinate their selfish interests and cooperate fully in advancing avia-

tion, free of un-American influences throughout the hemisphere; the program must not be retarded by bickering over which corporate entities shall or are best qualified to operate or participate in the operation of the main and feeder line services.

Third, the manufacturers must be granted the necessary encouragement and authority by our government to proceed rapidly with the design and production of those advanced types of transport planes—with special emphasis on freighters—which will assure continuance of commercial air supremacy not only in America but throughout the world.

"The all-American aviation bonds—implemented liberally by 'lease-lend' monies—if welded properly and without delay, will preserve our security and contribute materially to the post-war salvation of aviation, our key defense industry."

Texas A. & M. Names

Two to Aviation Staff

Edgar J. Leshner and Paul R. Higgins have been appointed to the staff of the department of aeronautical engineering at the Agricultural and Mechanical College of Texas, according to Dr. H. W. Barlow, department head.

Leshner was formerly connected with Douglas Aircraft Co. Inc., while Higgins was transferred from the mechanical engineering department of the college.

Enrollment in the department of aeronautical engineering now exceeds 200 students, Dr. Barlow stated.

New California Company to Make Airplane Parts

NATIONAL Machine Products, manufacturer of airplane parts, was recently incorporated in California and has taken over the Los Angeles factory of National Postal Meter Co. Louis H. McGraw has resigned as chairman of the board of National Postal Meter to head the new firm, while Robley F. Soper, formerly vice president of the postal meter concern, becomes vice president and general manager.

Backlog of the new company, which employs 240 workers, is in excess of \$200,000.

PROMPT ON-SCHEDULE
DELIVERIES... WRITE
OR WIRE FOR DETAILS
OF OUR FACILITIES

EXHAUST COLLECTORS

AND OTHER STAINLESS STEEL AIRCRAFT COMPONENTS

SHEET ALUMINUM FABRICATION • TANKS • COWLING • ETC.

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8000 WOODLEY AVENUE • VAN NUYS • CALIFORNIA

A THOROUGHLY COM-
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SPECIALIZING IN SERVING
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GOVERNMENT CONTRACTS

Awards of \$25,000 and Over

Release Date Shown

AIRCRAFT

Boeing Aircraft Co., Seattle, Wash., 4/29, airplanes and spare parts, \$17,201,352 (Air Corps).
 Douglas Aircraft Co. Inc., Santa Monica, Cal., 4/30, airplanes and spare parts, \$43,521,300 (Air Corps).

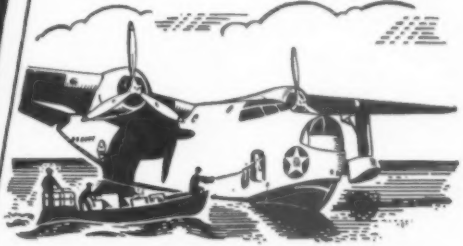
MISCELLANEOUS

Meriam Co., Cleveland, O., 4/22, manometers, \$39,136 (Air Corps).
 Hayes Mfg. Corp., Grand Rapids, Mich., 4/22, parachutes, \$145,500 (Navy).
 Switlik Parachute & Equipment Co., Trenton, N. J., 4/22, parachutes, \$184,000 (Navy).
 Fairchild Aviation Corp., Jamaica, N. Y., 4/24, aircraft cameras, \$69,300 (Navy).
 Pioneer Parachute Co. Inc., Manchester, Conn., 4/24, parachutes, \$425,255 (Navy).
 Fairchild Aviation Corp., Jamaica, N. Y., 4/25, computer assemblies, \$472,479 (Air Corps).
 Hayes Industries Inc., Jackson, Mich., 4/25, wheel and brake assemblies, \$86,424 (Air Corps).
 Aluminum Co. of America, Washington, D. C. 4/25, aluminum foil, \$165,563 (Air Corps).
 P. R. Mallory & Co. Inc., Indianapolis, Ind., 4/25, shackle releases, \$85,800 (Air Corps).
 Sperry Gyroscope Co. Inc., Brooklyn, N. Y., 4/25, instruments, \$116,000 (Air Corps).
 Chandler-Evans Corp., South Meriden, Conn., 4/25, maintenance parts, \$132,610 (Air Corps).
 Shell Co. Ltd., New York, N. Y., 4/25, aircraft fuel, \$185,000 (Air Corps).
 Pump Engineering Service Corp., Cleveland, O., 4/25, fuel and vacuum pumps, \$70,265 (Air Corps).
 Allison Division, General Motors Corp., Indianapolis, Ind., 4/25, engines, \$96,016 (Air Corps).
 Curtiss Propeller Division, Curtiss-Wright Corp., Caldwell, N. J., 4/25, blade assemblies, \$147,434 (Air Corps).
 H. D. Lee Mercantile Co., Kansas City, Mo., 4/25, flying suits, \$80,244 (Air Corps).
 Edgewater Steel Co., Pittsburgh, Pa., 4/25, adapter assemblies, \$158,492 (Air Corps).
 Hayes Industries Inc., Jackson, Mich., 4/25, wheel assemblies, \$26,075 (Air Corps).
 Continental Electric Co. Inc., Newark, N. J., 4/25, powerplants, \$154,998 (Air Corps).
 Quincy Compressor Co., Quincy, Ill., 4/25, compressors, \$68,917 (Air Corps).
 Blackhawk Mfg. Co., Milwaukee, Wis., 4/25, jack assemblies, \$69,120 (Air Corps).
 Reliance Mfg Co., Chicago, Ill., 4/25, parachutes, \$1,155,800 (Air Corps).
 Goodyear Aircraft Corp., Akron, O., 4/26, educational order for outer wings, \$1,653,833 (Air Corps).
 Goodyear Tire & Rubber Co. Inc., Akron, O., 4/26, wheel and brake assemblies, \$822,510 (Air Corps).
 AC Spark Plug Div., General Motors Corp., Flint, Mich., 4/28, spark plugs, \$1,149,967 (Air Corps).
 Champion Spark Plug Co., Toledo, O., 4/28, spark plugs, \$1,419,004 (Air Corps).
 Blackmer Pump Co., Grand Rapids, Mich., 4/28, fuel transfer pumps, \$60,000 (Air Corps).
 Pratt & Whitney Aircraft Div., United Aircraft Corp., E. Hartford, Conn., 4/29, aircraft engines, \$1,749,639 (Air Corps).
 Eagle Parachute Corp., Lancaster, Pa., 4/29, parachutes, \$105,095 (Navy).
 Titeflex Metal Hose Co., Newark, N. J., 5/2, manifold assemblies, \$257,760 (Air Corps).
 Scintilla Magneto Div., Bendix Aviation Corp., Sidney, N. Y., 5/2, manifold assemblies, \$126,000 (Air Corps).
 Pratt & Whitney Aircraft Div., United Aircraft Corp., E. Hartford, Conn., 5/2, spare parts for engines, \$222,547 (Air Corps).
 Pioneer Instrument Div., Bendix Aviation Corp., Bendix, N. J., 5/2, meter assemblies, \$111,402 (Air Corps).
 Jacobs Aircraft Engine Co., Pottstown, Pa., 5/2, engine parts, \$110,177 (Air Corps).
 General Electric Co., Schenectady, N. Y., 5/2, parts and assemblies, \$58,918 (Air Corps).
 H.L.B. Corp., New York, N. Y., 5/2, flying jackets and trousers, \$57,172 (Air Corps).
 Manning, Maxwell & Moore Inc., Bridgeport, Conn., 5/2, gage assemblies, \$27,700 (Air Corps).
 Hayes Industries Inc., Jackson, Mich., 5/2, wheel and brake assemblies, \$32,670 (Air Corps).
 H. Bernstein & Co., Chicago, Ill., 5/2, flying jackets and trousers, \$27,812 (Air Corps).
 Star Machine Manufacturers Inc., Bronx, N. Y., 5/2, solenoid assemblies, \$28,356 (Naval Aircraft Factory).
 Texas Co., New York, N. Y., 5/2, aviation gasoline, \$72,750 (Navy).
 Champion Spark Plug Co., O., 5/3, spark plugs, \$25,829 (Air Corps).

Minute Inspection



INSPECTION BENCHES in the new engine assembly building at Pratt & Whitney Aircraft Division of United Aircraft Corp. After initial testing, each engine is completely disassembled, and all its parts are laid out on one of the benches in this long row for minute inspection. Noticeable over each bench is a battery of fluorescent lights which give shadowless illumination.

ACTION
AT STAND-BY

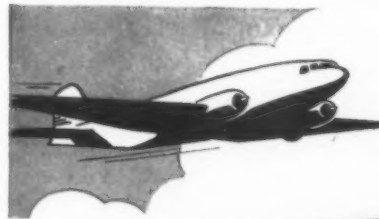
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Labor Review

Martin, Fairchild Labor Disputes Settled Without Production Loss

LABOR difficulties at two east coast aircraft plants were settled during the past fortnight as differences that led to a walkout by 27 of 17,000 employees at the Glenn L. Martin plant in Baltimore were smoothed over and new contracts were signed by representatives of Fairchild Aviation Corp., Jamaica, N. Y., and the CIO local, removing a strike threat.

Cause of the walkout at the Martin plant was the workers' demand

for a 10-cent-an-hour wage increase which the company refused. Glenn L. Martin, president, said the strike never threatened the firm's \$350,000,000 war orders. Martin declared the walkout had resulted in "no change whatever in the relationship between the company and its employees" and that "no separate agreement has been made by the company with anybody."

Giving the union's version of the strike, UAW-CIO Regional Director H. L. Smith stated that the walkout "won recognition for the UAW-CIO in all departments where it has members and reinstatement of the 27 hammermen whose discharge caused the walkout. As the number of strikers grew into the thousands the management weakened until a victorious settlement was reached."

Union officials added that charges would be filed with the NLRB alleging that the company made "unwarranted discharges and discriminations against workers" and that the independent union at the plant is "company-inspired." "Wage increases will be coming through as soon as we pick up a few more members," one union leader stated. The CIO claims 3,200 members at Martin.



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A ROUTINE TEST FOR AMERICA'S FIGHTING SHIPS

AN Army Air Corps test flight takes the measure of every component part of the ship. When the pilot pulls out of a dive, vibrations of complex and unpredictable character occur. Fastenings at every point in the ship must be able to ride out these vibrations... both in the test and during the years of service that follow.

More than 200,000,000 Elastic Stop Nuts... on every possible aircraft application... under every condition of flying... over a period of fourteen years... have proved that they stay tight under all test and field service conditions.



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Aircraft Index at 750

Using the 1935-39 average as 100, production in the aircraft industry, adjusted for seasonal variations, was placed at 750 in March in a recent Federal Reserve System survey. February's figure was 728 and Mar. 1940 was 299.

Next highest production rate in U. S. industry in March was shipbuilding where the index stood at 321.

No time was lost at the Fairchild plant which has over \$20,000,000 in war orders. Terms of the contract were not announced pending ratification by the union membership. Workers had asked for a 10-cent-an-hour wage increase and a closed shop.

Meanwhile, a strike by the UAW-CIO closed three plants of Excell-O Corp. at Detroit, Mich., May 6. Federal Conciliator L. F. Rye said more than 95 per cent of the firm's tool-making production was for war contracts. He estimated the stoppage affected 3,000 men. The walkout was called when unionists refused a five-cent-an-hour wage boost, holding out for 10 cents.

Vultee to Pay Premiums

Vultee Aircraft Inc. has announced that it will assume premium payments on group life insurance policies held by employees who volunteer or who are called into the armed forces.

Union Paper Out

First issue of the American Aircraft Builder, official organ of the

UAW-CIO aircraft drive, was published late in April, according to Director Richard T. Frankenstein. The paper is intended for aircraft locals and plants in the process of organization.

Wage Increase Granted

Thompson Products Inc., Cleveland, O., recently announced a general five-cent-an-hour wage increase for 4,700 employees.

Further Rise Sought

National Association of Die Casting Workers (CIO), recently victorious in a bargaining election at five Cleveland plants of Aluminum Company of America, has stated that it will ask for increases above the eight-cent boost granted by the company in April.

Six-Day Week Rejected

Curtiss-Wright Airplane Division employees at Buffalo, N. Y., recently rejected a working schedule which would enable the plant to increase the work week to six days. A new plan is to be submitted.

NLRB Elections

Recent NLRB election at Aircraft Accessories Corp., Burbank, Cal., gave International Association of Machinists (AFL) 49 votes and Aircraft Employees Association (Independent) 96. At Aro Equipment Corp., Bryan, O., an election gave the IAM-AFL 255 of 297 votes.

Strike Authorized

UAW-CIO recently authorized a strike at Bendix Products Division of Bendix Aviation Corp., South Bend, Ind., if the company refuses to grant a 10-cent-an-hour wage increase.

United Aircraft Boosts Pay

Approximately 18,000 employees of Pratt & Whitney Aircraft and Hamilton Standard Propellers Divisions of United Aircraft Corp. at E. Hartford, Conn., have been granted wage increases of five cents an hour; while 3,000 others at Stratford, Conn., received smaller boosts.

The firm estimated the increase, which followed by less than five months a similar boost granted in December, will total \$3,000,000 a year.

Boeing Union Suspended

Charging that the Boeing Aircraft Employees Aeronautical Mechanics Union (AFL) had been "a long-suffering victim of Communist strategy," Harvey W. Brown, grand lodge president, recently suspended the local from the parent International Association of Machinists.

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Industry's Accident Rate Hit by Rep. McCormack

Further Increase in Injuries Predicted Unless Drastic Steps are Taken; 580,518 Days Declared Lost in 1940

STATING THAT "on-the-job" accidents in the U. S. aircraft industry during 1940 injured over 5,600 workers, Rep. John McCormack (D., Mass.) recently told the House that resulting time lost totaled 580,518 days, or the equivalent of a year's work by 2,322 men.

"With 164,920 employees engaged in the production of planes at the close of 1940, the industry as a whole had an accident frequency rate of 17 for each million man-hours of production," Rep. McCormack declared.

"Due to the step-up in production necessitated by national defense orders and the necessity of training thousands of new workers, the aircraft industry may expect a 10 to 15 per cent increase in the number of accidents in 1941 unless drastic remedial steps are taken," Rep. McCormack concluded.

Meanwhile officials of the Bureau of Labor Statistics stated that the defense program is being delayed more because of industrial injuries than because of strikes. They attribute the rise in accidents in the aircraft industry to rapid expansion, employment of green labor, insufficient safety instruction for new em-

ployes, and overcrowding in plants. The Bureau indicated that the accident rate in the aviation industry is five or six times higher than in the automobile industry.

Chandler-Evans Expands

Chandler-Evans Corp. has announced plans for construction of an addition to its plant at South Meridian, Conn., which will bring the total floor space to more than 38,000 sq. ft. The expansion will permit doubling the production of fuel pumps and will make possible the initial manufacture of a new type Ceco carburetor.

Upon completion of the addition in July, employees at the plant will be increased from 190 to 270, according to B. H. Gilpin, executive vice president.

Diesel Experiment Noted

"Oxygen-Boosting of Diesel Engines for Take-Off" is the title of Bulletin No. 54 of the Engineering Experiment Station Series published at Pennsylvania State College, State College, Pa. Prepared by P. H. Schweitzer, professor of engineering research, and E. R. Klinge, graduate assistant, the bulletin is the result of an investigation conducted at the Diesel Laboratory of Penn State. Priced at 50c the bulletin consists of 28 pages and 31 figures.

J. E. Royall Becomes Menasco V.P., Director

THE ELECTION of John E. Royall as a director and his appointment as vice-president in charge of finances was announced late in April by Menasco Manufacturing Co. His experience in the field of finances covers a period of 25 years.

Royall's interest in aviation dates back to the World War, at which time he was a Lieutenant in the Army Air Corps.

E. B. Anderson Named

E. B. Anderson, assistant sales manager of Pacific Airmotive, has been appointed material control manager of Airplane Manufacturing & Supply Corp., Burbank, Cal. It was announced recently by Earl Herring, president and general manager of the firm.

Kukla Named to Staff of Lightplane Institute

JAMES KUKLA, formerly in charge of the free flying instruction program of the state of Tennessee, has been named chief of the research division of the newly organized Aeronca Institute at Middletown, O., experimental foundation for the lightplane field established by Aeronca Aircraft Corp.

Kukla will head a department composed of six engineers and mechanics which will devote its full time to a wide range of experimentation on all phases of lightplane building. This department will develop and test new materials, and will experiment with new models and new production methods.

Kukla is a reserve captain in the Army Air Corps and has for many years been active in a technical capacity with lightplane manufacturing companies.

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Quit-Rate Factor in Aircraft Manufacturing Is Highest of All Major Defense Industries

Discharges Also at Top, Labor Dept. Announces; Layoffs Drop to Low Levels, Hiring Rises; Wages, Hours Show Steady Climb

THE QUIT-RATE factor in labor turnover in aircraft manufacturing in Feb. 1941 was higher than that of any other major defense industry, according to figures released recently by the Bureau of Labor Statistics of the Labor Dept.

During February, the number of quits per 100 employees was 2.21, compared to 1.85 in shipbuilding, 1.58 in machine tools, 1.50 in foundries and machine shops, 1.28 in aluminum, 1.02 in automobile manufacturing and 0.76 in iron and steel.

Despite its position at the top of the list in February, the aviation industry's January quit-rate was even higher, being 2.44.

Included under "aircraft industry" by the Bureau are manufacturers of airframes and propellers, but not manufacturers of engines. A "quit" is officially defined as "a termination of employment by the employee, regardless of his reasons."

Keeping pace with the quit-rate in aircraft manufacturing were discharges, which were also the highest for defense industries. Layoffs, on the other hand, were among the lowest. The discharge and layoff rates per 100 workers in the aircraft industry in February were 0.50 and 0.24, respectively; compared with 0.23 and 1.13 in aluminum, 0.37 and 1.04 in foundries and machine shops, 0.37 and 0.13 in machine tools, 0.36 and 1.21 in shipbuilding, 0.09 and 0.27 in iron and steel and 0.06 and 0.97 in automobiles.

Total separations, including quits, discharges, layoffs and miscellaneous, placed shipbuilding at the top among defense industries with 6.13, aluminum 4.40, aircraft 3.41, foundries and machine shops 3.37, automobiles 2.53, machine tools 2.42 and iron and steel 1.55.

That the inordinately-large quit-rate in the aircraft industry may be caused partly by "labor pirating" has been suggested by some observers.

Indication of the increasing production tempo in aircraft plants may be seen in the sharp drop in

the layoff rate from 4.20 in Feb. 1940 to 0.33 in Jan. 1941 and the equally marked rise in the hiring rate, including both new and rehire, during the same period from 6.92 to 12.17. Hiring rates in other defense industries in Jan. 1941 were: shipbuilding 18.21, foundries and machine shops 8.18, aluminum 4.72, machine tool 6.68, automobile 3.07 and iron and steel 3.29.

Of the 12.17 hiring rate in the aircraft industry, 11.49 was new and 0.68 rehire.

Aircraft Wage Rise Steadily

Weekly and hourly wages as well as working hours in the aircraft industry have risen almost without interruption since 1934, according to figures released by the Bureau of Labor Statistics. In 1934 average weekly earnings were \$24.65, 1935, \$25.75, 1936 \$26.08, 1937 \$27.83, 1938 \$29.02, 1939 \$30.34 and 1940 \$31.38. That the increases are accelerating may be seen in recent monthly averages—Dec. 1940, \$33.17; Jan. 1941, \$34.13 and Feb. 1941, \$35.20.

Average hourly earnings are: 1934 63.6 cents, 1935 65.0, 1936 63.2, 1937 66.6, 1938 72.8, 1939 74.5, 1940 74.3, Dec. 1940, 75.6; Jan. 1941, 77.6 and Feb. 1941, 78.4.

Average hours worked per week are: 1934 39.4, 1935 40.9, 1936 42.1, 1937 42.3, 1938 40.1, 1939 41.5, 1940 43.2, Dec. 1940, 44.6; Jan. 1941, 44.7 and Feb. 1941, 45.6.

In comparison with other lines, now included among defense industries, aircraft hours are, on an average, longer and wages lower. In Feb. 1941, when aircraft workers were receiving 78.4 cents an hour and working 45.6 hours a week, automobile workers received 97.5 cents and worked 41.1 hours; shipbuilders 90.3 cents and 42.9 hours and aluminum workers 74.4 cents and 41.7 hours.

Jobs, Payrolls Gain

An estimated 155,700 wage earners were employed in the aircraft indus-

try in Mar. 1941, a gain of 6,000 over February, according to the Labor Dept.

Using the three-year average 1923-25 as 100, employment in the aircraft industry in March stood at 5560.4 and payrolls at 6661.0. Using the same index, March employment in the automobile industry was 131.4 and payrolls were 161.1; shipbuilding, employment 272.8 and payrolls 365.3 and aluminum, employment 208.5 and payrolls 239.0.

F. G. Sorensen Heads Aircraft Products Co; Withers Named V. P.

CHANGES in officers of United Aircraft Products Inc. at the annual meeting in Dayton, Apr. 28, included election of Frank G. Sorensen, Cincinnati, as president, succeeding H. L. Bill, New York, who has held the office for the last two years and who remains as a director.

Cleemann Withers was named executive vice president.

John Shotwell, previously treasurer, was elected to a combined post of secretary and treasurer, succeeding F. E. Crist, secretary. Thomas Joyce, Los Angeles, was added to the board, succeeding H. H. Wagenseller, also of L.A.

Sorensen, who is also secretary and treasurer of Cincinnati Gear Co., is a director of the corporation and since 1929 has been chairman of the executive committee.

Earl Herring Elected Kinner V.P. and Director

Earl Herring, general manager of Kinner Motors Inc., Glendale, Cal., has been elected vice-president and a member of the board of directors of the company, it was announced late in April.

Martin Post to Schurman

Appointment of E. A. Schurman as chief of protection of Glenn L. Martin Co. factories was announced recently by the company. Schurman, who was formerly head of the Florida State Highway Police, resigned as superintendent of uniformed guards at the U. S. Treasury Dept. to accept the Martin post.

The guard force at the Martin plant now totals 63 men, with the number expected to be doubled upon completion of Plant 1 additions and the new Plant 2.

Allied Aviation Corp. Acquires Dundalk Unit For Subcontract Work

ALLIED AVIATION CORP. announced recently the acquisition of North American Aviation's Baltimore plant at Dundalk, Md., for the manufacture of molded plywood structures under the Vidal Press patents. Plant consists of 65,000 sq. ft. (see cut below) together with



is said to be one of the most accurate wind tunnels owned by a private corporation in the east.

While complete aircraft is not contemplated, it is expected that full production facilities will be devoted to assembly of fuselages, tail surfaces, flaps, etc., under subcontract to military aircraft manufacturers and the lightplane industry.

President of Allied Aviation is Richard E. Breed, 3rd, also president of General Refining Corp., director of American Gas and Electric Corp., and former president of Bristol Aircraft Corp.

Other officers of the newly formed company are B. Litchfield, formerly international sales manager of Fairchild Aviation Corp., as vice president in charge of sales; George Breed, vice president; and Kurt Winters, secretary-treasurer. Walter Burke, recently chief hydrodynamicist of Glenn L. Martin Co. and formerly of the NACA, is chief engineer.

S. P. Lyon Becomes Kellett Coordinator and Assistant

Appointment of Sidney P. Lyon as coordinator and assistant to Executive Vice President R. G. Kellett of Kellett Autogiro Corp. was announced recently by Mr. Kellett. Lyon has been connected with Glenn L. Martin Co. as head of the subcontracting department.

"The present activities of Kellett Autogiro Corp., which are primarily concerned with subcontract manufacturing for military aircraft makers, will benefit from Mr. Lyon's long experience in this field," Mr. Kellett said. The Martin company is one of Kellett's principal customers.

A New 'Boeing News'

First issue of the new Boeing News made its appearance early in April in the form of a 16-page house organ which will be published monthly for all company employees by Boeing Aircraft Co.'s publicity department at Seattle.

Industrial Appointments



THE FOLLOWING APPOINTMENTS in the manufacturing field were announced recently. Reading from left to right they are:

ALBERT J. OLSON, superintendent of maintenance or Northeast Airlines, Boston, has been appointed development and service engineer of Simmonds Aerocessories Inc. He will make his headquarters at the plant of Simmonds-Benton Manufacturing Division in Vergennes, Vt.

W. E. (BILL) LIND, for the last two years project engineer for Menasco Manufacturing Co., has been appointed service manager of the company to carry out a nationwide service program.

DEVER K. WARNER, formerly with the aviation radio sales division of RCA Manufacturing Co., has joined Air Associates at Glendale, Cal., where he will be active in the engineering sales of the organization's newly formed radio division.

ALLAN DYSART, former chief inspector of Consolidated Aircraft Corp., has been appointed chief of the inspection department of Republic Aviation Corp., Farmingdale, N. Y. A member of the Republic organization since 1935, Dysart has been connected with the production of the firm's P-35A, AT-12, and P-43 Lancer planes for the Army Air Corps.

FRANK HARRISON KELLEY JR., formerly with the flight staff of Vought-Sikorsky Aircraft, has joined Bell Aircraft Corp.'s flight research department at Buffalo where he will work with Senior Test Pilot Robert M. Stanley.

H. W. ANDERSON, manager of the aviation department of Whiting Corp., Harvey, Ill., now organized to serve the industry. Anderson joined Whiting several months ago, leaving his job as chief of air carrier inspection in the CAA.

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Plant Expansion Pacts Spurt

18 Firms Allotted
Government Funds
Totaling \$15,000,000

THE PACE of government authorizations for expansion of aircraft facilities continued to accelerate during the past fortnight as Federal grants to 18 firms totaling over \$15,000,000 were announced by the War and Navy Depts. and Reconstruction Finance Corp. Under the terms of Defense Plant Corp. agreements, by which a majority of the expansions are financed, title to the new facilities remains in the hands of the government agency, with the manufacturer having the option of purchasing the property at the end of five years.

Curtiss-Wright Corp. received the largest contract of \$4,503,494 for additional machinery and equipment, revision in construction and land improvements at its Columbus, O., St. Louis, Mo., and Buffalo, N. Y., plants. The agreements call for expenditures of \$1,198,747 at Columbus, \$1,573,460 at St. Louis and \$1,731,287 at Buffalo, according to the War Dept.

These are additions to original contracts authorized in December for facilities at the three locations which called for \$13,181,950 at Columbus, \$13,471,150 at St. Louis and \$14,962,103 at Buffalo.

Willis-Overland Motors Inc., Toledo, O., at the request of the War Dept., has been awarded \$2,172,000 for new facilities, including \$102,000 for rehabilitation of a building and \$2,070,000 for equipment to be used in the manufacture of aluminum forgings for airplanes. The plant will be located at Toledo.

Chrysler Corp., Detroit, Mich., has entered into an agreement providing for facilities costing \$1,691,200 to be used in the manufacture of military aircraft parts. Approximately \$16,000 will be used for building installations, \$1,495,300 for equipment and machinery and \$179,900 for portable tools. The agreement for the new facilities, which will be located in Detroit, was authorized at the request of the War Dept.

Ex-Cell-O Corp., Detroit, Mich., has been awarded an additional \$1,816,979 for expansion of plant facilities for the manufacture of small machined parts and assemblies for aircraft engines and propellers, the Navy Dept. announced. This contract is a com-

plete substitute for a prior agreement made Jan. 2, 1941 which totaled \$1,689,678 and brings the full award to \$3,506,657.

American Bosch Corp., Springfield, Mass., has been allotted \$761,409 for the acquisition of equipment, machinery and tools to be used in the manufacture of airplane parts. The agreement was authorized at the request of the Navy Dept.

Jack & Heintz Inc., Cleveland, O., has entered into an agreement totaling \$1,293,121 for expansion of facilities for the production of airplane parts. The contract, authorized at the request of the War Dept., allots approximately \$372,200 for land and buildings and \$920,921 for equipment and portable tools.

A Defense Plant Corp. agreement with Jack & Heintz totaling \$396,021 for new equipment for the manufacture of electric aircraft starters was announced in April.

Vickers Inc. (subsidiary of Sperry Gyroscope Co. Inc.), Detroit, Mich., has been awarded \$541,721 for expansion of facilities to be used in the manufacture of hydraulic and artillery fire control equipment. Approximately \$206,680 will be used for enlargement of a building and \$335,041 for additional machinery and equipment.

Vickers received an authorization of \$895,000 for a building and equipment for the manufacture of aircraft hydraulic controls in February.

Thompson Products Inc., Cleveland, O., has received an authorization of \$249,492 for the acquisition of additional equipment at the company's plant at Bell, Cal., for the manufacture of aircraft engine parts and accessories. Thompson Aircraft Products Co., Cleveland, O., subsidiary of Thompson Products Inc., was granted \$11,198,472 by the Defense Plant Corp. for land, buildings, machinery and equipment for the manufacture of aircraft engine parts and accessories in February.

Engineering and Research Corp., Riverdale, Md., at the request of the Navy Dept., has been awarded \$201,415 for construction and equipping of a plant to manufacture machine tools and aircraft parts. Approximately \$40,000 will be used for land and buildings and \$161,415 for equipment and machinery.

Perfect Circle Co., Hagerstown, Ind., has been granted \$208,850 for the acquisition of additional machinery and equipment to be used in the manufacture of airplane parts.

Columbia Aircraft Products Inc., Dunellen, N. J., has received a loan of \$9,500 to be used as working capital in connection with a contract with Wright Aeronautical Corp. for hose connections.

Bloomfield Tool Corp., Bloomfield, N. J., has been granted \$220,177 for the manufacture of gauges and tools for use in the production of aircraft.

Houde Engineering Corp., Buffalo, N. Y., at the request of the War Dept., has been allotted \$38,865 for the acquisition of machinery and equipment for the manufacture of airplane parts.

Navy Dept. Awards

The Navy Dept. recently announced that it has entered into contracts (and supplements to contracts previously announced) with five companies for the acquisition, construction and installation of additional plant facilities for the manufacture of airplane parts and accessories.

The firms and awards are: Electrol Inc., Kingston, N. Y., \$393,462; Titeflex Metal Hose Co., Newark, N. J., \$375,000; Worthington Pump & Machinery Corp., Holyoke, Mass., \$129,700; Vought-Sikorsky Aircraft Division of United Aircraft Corp., Stratford, Conn., \$365,918 (supplement to contract announced Dec. 9, 1940, and increasing same from \$1,600,000 to \$1,965,918); and Edo Aircraft Corp., College Point, N. Y., \$43,326 (increasing contract announced Dec. 4, 1940, from \$355,000 to \$398,326).

Pullman

The War Dept. has announced that the Defense Plant Corp. agreement of \$1,108,901 with Pullman Standard Car Mfg. Co., Chicago, Ill., which was authorized in April will be used for facilities for the manufacture of outer wing assemblies and spare parts for Douglas Aircraft Co. Inc.

EDISON ENGINEER

William L. Ludwick Leaves Farnsworth Corp. to Join Instrument Division

Appointment of William L. Ludwick as chief engineer of the instrument division of Thomas A. Edison Inc., West Orange, N. J., was announced recently. The company entered the aircraft instrument field about a year and a half ago.

Ludwick has had a broad experience in the field of aircraft and industrial instruments and control equipment. He went to the Edison company from Farnsworth Television and Radio Corp. where he was chief mechanical engineer in charge of commercial design of television transmitter and high frequency apparatus.

Curtiss-Wright Begins Work on New Propeller Plant at Beaver, Pa.

GOV. ARTHUR H. JAMES of Pennsylvania broke ground for Curtiss-Wright Corp.'s new 415,000 sq. ft. propeller plant at Beaver, Pa., Apr. 24, only five days after the company had dedicated its 380,000 sq. ft. propeller unit in Caldwell, N. J.

When completed, the \$5,000,000 Beaver unit will be the nation's largest propeller plant. It will employ 4,000 workers and bring the total number of employees in Curtiss-Wright's Propeller Division to 15,000. The Division's total floor area will be approximately 1,400,000 sq. ft. when production gets under way at the Beaver plant early in the fall.

Plans have been prepared for a training school at Beaver to supply a majority of the workers needed at the new plant.

Present at the ground breaking ceremony were Guy W. Vaughan, president of Curtiss-Wright, and Robert L. Earle, general manager of the Propeller Division.

STEER HORNS For Sale Six Foot Spread, Polished and Mounted. Rare Decoration for Home or Office, Texas Longhorn Cattle now extinct. Free Photo.

Lee Bertillon, Mineola, Texas.

AVIATION INSTITUTE OF TECHNOLOGY

Frank Ambrose, Pres.
Aircraft & Aircraft Engine Courses
C.A.A. Recognized N.Y. State Licensed
Dept. S, 36-01 35th Ave.
Long Island City New York

EXECUTIVES:

The purchaser of this space is a young man who is married and has three children. He has definite executive ability, an excellent general knowledge of the aircraft industry, and a considerable capacity for making firm and lasting friends among his employees, associates, and customers. In addition he has 2200 flying hours and holds a commercial pilot's certificate.

He founded his own airplane sales business almost eight years ago. Since that time he has successfully managed it through both good and bad years and is at present in the midst of the best season since 1937. Nevertheless, the desire to do something more useful during the present emergency as well as the possibility of a future shortage of airplanes for private sale has led him to publish this advertisement in the hope that his experience might be of service to some established airplane manufacturer. If you can use such a man, reply to box 329, American Aviation, Earle Building, Washington, D. C.

Buick Men Ready to Build Engines



OFFICIALS OF BUICK MOTORS who will be concerned with the organization's aircraft engine plant, now rising on a site in Melrose Park, Chicago, are, left to right:

HARLOW H. CURTIS, president and general manager of Buick Motor Division and vice president of General Motors Corp.

DALE E. WILLIAMS, manager of Buick Airplane Engine Division of General Motors.

JOSEPH G. HAMMOND, general manufacturing manager of Buick Airplane Engine Division.

L. A. STEWART, Buick purchasing agent since 1934.

BRADLEY W. STICKNEY, resident purchasing agent of the aircraft engine plant.

The \$31,000,000 engine plant, pictured in AMERICAN AVIATION for Feb. 15, will build 500 Pratt & Whitney engines monthly and employ 10,000 in normal operation.

P&W Ships 1,200 Engines in March To U. S. and British Governments

PRATT & WHITNEY Aircraft Division shipped 1,200 airplane engines to the U. S. and British governments during March, according to Eugene E. Wilson, president of United Aircraft Corp., who stated that the division is now 1,400 engines and 1,560,000 hp. ahead of the schedule laid down last year by the Office of Production Management. Hamilton Standard Propellers Division, now shipping approximately 2,000 propellers a month, is also far ahead of schedule, Wilson said.

A recent stockholders' report disclosed that United Aircraft's deliveries made for shipment in the first three months of 1941 were \$54,863,135, or 41 per cent of the entire deliveries made for shipment in 1940. In the first three months of 1940 shipments totaled \$16,550,721. Backlog on Mar. 31 was \$408,323,008, compared with \$445,122,070 on Jan. 1. New business booked during the quarter totaled \$18,064,073.

Wilson declared that the present production program of the firm, although running far ahead of the "impossible schedule" laid down last year, might be hindered in coming months by limitations of deliveries of magnesium castings and nickel for alloys.

"We have anticipated that we must be rationed on magnesium and have taken steps to meet the situation in order to continue our accelerated production," Wilson said, adding that magnesium rationing, if and when it comes, will affect the company chiefly through its subcontractors.

Pratt & Whitney is now turning out over 1,200,000 hp. a month at its E. Hartford, Conn., plant, which covers 1,600,000 sq. ft., compared with 400,000 sq. ft. last summer. Work was begun recently on the construction of a new 500,000 sq. ft. addition, which, when completed early in August, will bring P&W's total floor space to more than 2,000,000 sq. ft. Initial production in the new \$15,000,000 wing is scheduled for late September.

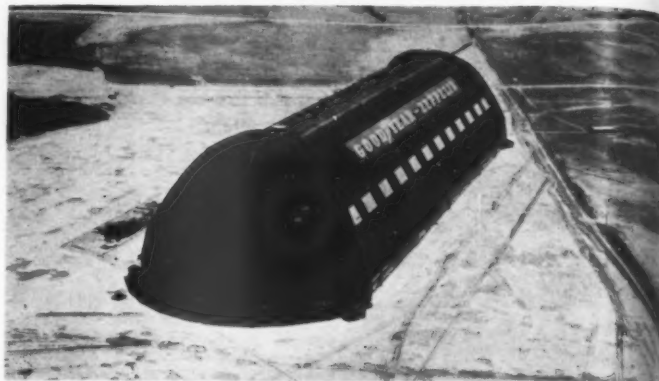
Retirement Plan Approved

A cooperative plan to provide retirement income for employees was approved by United Aircraft stockholders Apr. 29 and went into effect May 1. The arrangement applies to workers who are more than 30 years old and who have had at least two years of continuous service.

The plan provides for a yearly retirement income at 60 for women and 65 for men, based on a percentage of the employee's salary or wage for each year that he participates in the plan. The cost of the plan will be borne jointly by employees and the company, with the former paying a percentage of their salary each month and the firm contributing the balance necessary to provide the specified income.

In addition, the company will provide, at its own expense, a retirement income for past service, based on a percentage of earnings for the year 1940 and the length of past service. The firm will also purchase additional retirement income for employees who are 55 or older and who have had 10 years or more of continuous service.

Site of Parts Manufacture



GOODYEAR AIRCRAFT CORP. at Akron, O., entered the airplane parts field last summer, utilizing space and metal fabricating machinery at the company's huge air dock, shown above,

at Akron Municipal Airport. Rapidly increasing demand for these parts made it necessary to arrange for substantial expansion of the original plant facilities.

Wright Aeronautical Engine Output Hits New Peak in March

SURPASSING the projected production program scheduled last May with defense officials, Wright Aeronautical Corp. reached a new monthly high in aircraft engine output by turning out 1,430,000 hp. during March, according to Guy W. Vaughan, president.

Wright production in February was 1,210,000 hp. and in January 1,100,000 hp. The March production figure represents a 500 per cent increase over Sept. 1939. By July of this year the company's five Paterson, N. J., plants are scheduled to reach a maximum output of about 1,780,000 hp. monthly.

Manufacturing operations were begun recently at the new 50-acre Wright plant at Lockland, O., 142 days after ground was broken. Shipment of the first engines is expected in June, with maximum production set at 2,000,000 hp. monthly.

Over 1,000 workers, the first of a approximately 14,000 to be employed in the Lockland plant, have already been placed on the payroll for immediate production, according to Myron B. Gordon, vice president and general manager.

This contingent, Gordon said, includes a more than sufficient number of machine operators to man the machines recently installed in the first section of the new plant. Most of the operators are graduates of the company's vocational training program, which is equipped to produce operators faster than machines can be installed for them to run, Gordon stated.

Fiske Elected Director

John Fiske, vice president of Fiduciary Trust Company of New York, has been elected a director of Colgate-Larsen Aircraft Co., Amityville, N. Y., according to Gilbert Colgate, president and chairman of the board.

Other directors of the organization are Richard C. du Pont, Minton M. Warren and R. G. Ervin.

Men Who Will Direct North American's 3 Plants



PERSONNEL OF NORTH AMERICAN Aviation Inc. involved in the recent executive reorganization, reported in Mid-April, are pictured here. The new organization structure was made to expedite management of the company's recently organized units at Dallas, Tex., and Kansas City, Kan., as well as the parent plant at Inglewood, Cal.

Under the new structure, operating functions of the three plants are divided into six basic elements, and the head of each of the functions will be responsible to J. H. Kindeberger, company president, and J. L. Atwood, vice president and assistant general manager.

Reading from left to right in the top row of pictures, the men concerned in the executive reorganization are:

J. H. KINDEBERGER, president of North American Aviation Inc.

J. L. ATWOOD, vice president and assistant general manager.

C. J. GALLANT, staff assistant and technical consultant.

NOBLE SHROPSHIRE, staff assistant and contract administrator.

H. R. RAYNOR, staff assistant who will handle special executive assignments.

R. H. RICE, chief engineer, will head all engineering work. Bottom row, left to right:

J. S. SMITHSON, as works manager, will direct factory managers in each of the three plants, and will supervise local and eastern outside production as well. LELAND R. TAYLOR, as director of industrial relations, will supervise plant protection and personnel functions.

R. A. LAMBETH, treasurer, who will be in charge of assistant treasurers at Inglewood, Dallas, and Kansas City.

R. E. DAWE, as director of inspection, will be responsible for quality control, supervising chief inspectors at each of the three cities.

R. L. BURLA, as director of public relations and assistant to the president, will have under him public relations offices at the three locations.

Previously, management of the firm was organized in three main functional groups, consisting of engineering, factory, and financial, and headed respectively by Rice, Smithson, and Lambeth.

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R. S. Damon on Leave from American To Head Republic; Kellett is Chairman

RALPH S. DAMON, vice-president in charge of operations for American Airlines, on May 1 was elected president of Republic Aviation Corp., and W. Wallace Kellett, who has been president of the aircraft manufacturing organization since 1939, was elected chairman of the board.

Damon obtained a leave of absence from his duties with the airline and will remain as vice-president and director of American subject to approval of the Civil Aeronautics Board.

Frederick G. Coburn Jr. of New York, president of McLellan Stores Co., and Lester Watson of Boston, member of the firm of Hayden, Stone and Co., were elected to Republic's board of directors, as was Damon.

The action on the part of the board of directors was "designed to

expand the executive organization of Republic Aviation Corp. as it enters upon a new phase in the national defense program."

Damon, who has assumed duties as Republic's chief executive officer, has been the operations vice-president of American since Jan. 1936. Prior to his entry into the air transport field that year, he had a long and successful career in aircraft manufacturing, during which he pioneered in mass production methods.

At Curtiss-Wright's St. Louis plant, which he headed, he developed the Curtiss Condor, first sleeper transport.

Kellett headed Republic during its period of greatest expansion, as employment increased from 170 to more than 2,600 and orders mounted from zero to more than \$60,000,000.

New C-W Director



Robert L. Earle

Vice president of Curtiss-Wright Corp. and general manager of its propeller division, has been elected a director of the corporation, it was announced on Apr. 16 by G. W. Vaughan, president of the organization.

Aviation Credit Corp. Opens Dallas, Los Angeles Offices

Ronnie Shillington, president of Aviation Credit Corporation of St. Louis, on May 5 announced

the opening of branch offices at Dallas and Los Angeles. Additional branch offices will be announced shortly in the mid-west and east, according to present plans. The new Dallas branch, in charge of Dan Regan, is located on the ground floor of Love Field administration building. The Los Angeles branch at Van Nuys Metropolitan Airport is in charge of Tom E. Collins, vice president of Aviation Credit.



Regan

Wellman Buys Building

Wellman Bronze & Aluminum Co., Cleveland, O., through the Defense Plant Corp., has purchased a building containing 42,000 sq. ft. of floor space to increase production of magnesium alloy castings for airplane parts. Firm officials said the new plant would be in operation within three months.

The \$194,221 contract includes funds for purchasing, remodeling and equipping the unit, according to the War Dept.

Reynolds Metals Co., Airesearch Mfg. Name New Sales Executives

NEW APPOINTMENTS in the sales divisions of the respective companies were announced recently by Reynolds Metals Co. and Airesearch Manufacturing Co.

Reynolds company appointed J. Louis Reynolds, vice-president in charge of export sales, to the position of general sales manager of the company for the duration of the present national emergency.

Airesearch of Glendale, Cal., announced appointment of Bill Larner as sales man-



Larner



Reynolds

ager of the organization, producers of aircraft heat-transfer equipment and cabin pressure control systems.

Following his appointment, Larner reported that Airesearch is now located in its new 80,000-sq. ft. plant at Los Angeles Municipal Airport.

With 15 years of experience with TWA and other airlines, Larner will continue as sales manager of Northhill Co., Airesearch affiliate, makers of anchors for aircraft and marine use.

The Reynolds company is devoting considerable attention to the production of many strong aluminum alloy products for use in aircraft. The organization's new general sales manager, a sportsman pilot, will make his headquarters at the home offices at Richmond, Va., also maintaining offices in New York City.

Canadian Firm Appoints 3

Executive appointments at Thompson Products Ltd., St. Catharines, Ont., Canada, have been announced by G. A. Stauffer, vice president and general manager, as follows:

J. C. Wilson, director and vice president in charge of sales; Fred Alcock, director and vice president in charge of manufacturing and J. R. Leach, director and assistant secretary-treasurer.

Pension Plan Approved

Stockholders of Sperry Corp. approved a proposed employee retirement pension plan at their annual meeting recently.

Don Luscombe Heads Reynolds Metals' Aero Parts Work at Louisville

DON A. LUSCOMBE, organizer of Luscombe Airplane Corp. at West Trenton, N. J., has been named head of the aircraft parts division of the Louisville, Ky., plant of Reynolds Metals Co. It was announced on Apr. 16 by R. S. Reynolds, president.

Luscombe entered the airplane manufacturing business after the war and worked for Waco Aircraft and Lambert Engineering Corp. He formed Monocoupe Aircraft Corp., a unit of Allied Aircraft Industries Inc. of St. Louis, resigning this position early in 1935.

He formed the Luscombe organization on Apr. 17, 1935, and entered the field of producing all-metal craft assembled from discut models, making the Luscombe Phantom, an all-metal two-place monoplane.

ANGELL WITH MORROW Acquires Financial Interest in Corporation and Will Take Part in Management

W. R. "Bob" Angell Jr., formerly general manager of Continental Aeronautics Corp., has joined



Angell

Morrow Aircraft Corp., San Bernardino, Cal., and has acquired a "substantial financial interest in the corporation and immediately will take an active part in the company management."

Prior to his connection with

Continental Aeronautics, Angell was manager of Continental Motors Corp.'s aircraft engine division. With Morrow, he will divide his time between the San Bernardino plant and the company's experimental shops in Los Angeles.

New Distributors Named

Freedman-Burnham Engineering Corp., Cincinnati, O., recently announced the appointment of two new distributors for the company's adjustable pitch propellers: Bennett Air Service, Hightstown, N. J., and Van Dusen Aircraft Supplies, Minneapolis, Minn.

The Freedman-Burnham propeller is now factory equipment on three light-planes, the Luscombe Silvalre, Monocoupe and Culver, and is available as optional equipment on all other makes of light-planes.

New Type Certificates

Among the new type certificates recently issued by CAA's aircraft airworthiness section is aircraft TC 735 assigned to Harlow Aircraft Co., Alhambra, Cal., for Model PC-5A, two-place cabin land monoplane powered with Warner Super Scarab 165-D engine. Specification requirements include placard speeds of 170 mph. for level flight or climb, 230 mph. for glide or dive, and 105 mph. with flaps extended; maximum placard limits, except take-off 2,100 rpm. (165 hp.), take-off 2,250 rpm. (175 hp.); maximum permissible diameter of propeller 84 inches; fuel capacity 34 gallons; standard weight 2,600 lbs.

No production certificate has been granted, but prior to original certification each plane must satisfactorily pass: (a) inspection for workmanship, materials and conformity before any covering, metal priming or final finish is applied; (b) final inspection of completed aircraft, and (c) check of flight characteristics.

Piper Aircraft Corp., Lock Haven, Pa., has received aircraft TC 740 for Model J4E, two-place cabin land monoplane powered with Continental A-75-9 engine. Placard speeds of 100 mph. for level flight or climb and 135 mph. for glide or dive are indicated. Maximum and take-off placard limits are 2,600 rpm. (75 hp.); propeller diameter 70-72 inches; fuel capacity 25 gallons; standard weight 1,400 lbs. Production certificate is No. 7.

Aeronautical Engineering & Research Organization Inc., Chicago, Ill., has been issued propeller TC 767 for Model DC700, steel hub with Pregwood blades, diameter 7 ft. 6 in., adjustable pitch, 2,150 rpm., 125 hp.

Hamilton Standard Propellers, Division of United Aircraft Corp., E. Hartford, Conn., has received propeller TC 764 for Model 23F with steel hub and aluminum alloy blades, diameter 17 ft. to 13 ft. 6 in., hydromatic controllable (feathering) pitch, 1,800 hp., 993 rpm.

Sensenich Brothers, Littleton, Pa., has received propeller TC 765 for Models 74FA and 74FB, wood, diameter 6 ft. 2 in., pitch 5 ft. 2 in. to 4 ft. 10 in., 130 hp., 2,600 rpm.

A few copies remain of the reprint of four articles on AIR FREIGHT

by William M. Sheehan which appeared in February and March issues of AMERICAN AVIATION

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Financial Review

Current SEC Reports

National Airlines Inc.

In prospectus for 40,000 common shares \$1-par, company reports it has entered into separate agreements with (a) Lehman Bros. and (b) G. T. Baker, president of the airline, providing option warrant for 10,000 shares each at \$7.50, through Apr. 15, 1944, in return for (a) underwriting issue and for certain business advice rendered by underwriter, and (b) agreement of Baker to accept the option warrant to be issued thereunder, plus cash salary of \$1,000 a month in year ending June 30, 1941.

Net proceeds of stock sale will be used toward payment of 4% note dated Jan. 15, 1941, due Mar. 30, 1941, in principal amount of \$100,000 made to order of Chase National Bank. Shares will be purchased at \$7 and sold to public at \$7.50. About \$83,099 of amount borrowed was used to complete payment for Lockheed Lodestar, engines and radio equipment acquired Jan. 25 at cost of \$86,599. Remainder will be used for working capital.

Financial Reports

PAN AMERICAN AIRWAYS CORP.—Net income for 1940 totaled \$2,256,318, after taxes, equal to \$1.19 each on 1,887,355 shares outstanding, against profit of \$1,984,438 in 1939. Gross income increased to \$27,334,117 last year from \$20,610,930 in 1939, while operating costs and income deductions, including taxes, increased to \$25,077,799 from \$18,626,492. Tax bill, excluding sales taxes, was \$1,549,441 in 1940 against \$926,709 the previous year.

PAA operated 72,615 route miles, compared with 62,305 the year before. Passengers carried increased from 246,295 in 1939 to 285,095, passenger miles flown from 110,484,406 to 142,205,456.

Consolidated balance sheet at Dec. 31: Current assets \$11,815,401, including \$5,472,927 cash; current liabilities \$6,633,352. During 1940, \$5,067,000 was spent for new flight equipment and ground facilities, with additional \$875,000 deposited against purchase of aircraft for future delivery. Commitments for aircraft and other capital assets totaled \$10,000,000 at year-end.

CANADIAN COLONIAL AIRWAYS INC.—Net operating loss for 1940 of \$20,741 was converted into \$10,220 profit by \$31,981 derived from sale of fixed assets, after allowing for \$1,019 in deductions from prior year's charges.

This compares with \$1,252 net loss in 1939. Current assets at Dec. 31 amounted to \$174,488, current liabilities \$145,338, capital surplus \$253,212, deficit from operations \$54,017.

Sigmund Janas, president, told stockholders that war conditions have caused substantial reduction in travel out of Canada by Canadian citizens, greatly lessening the traffic expectations for 1941.

CANADIAN AIRWAYS LTD.—Report for 1940 shows net loss \$102,463, against \$211,370 loss in 1939. Operating revenue totaled \$1,169,730, general expenses \$1,148,543, capital expenditures \$383,505, including 7 aircraft and 17 engines. Company operated 41 planes at end of year. Passengers increased from 20,214 in 1939 to 29,759, passenger miles from 2,953,403 to 3,513,074, mail pound miles from 93,646,813 to 101,369,864, and express pound miles from 429,924,597 to 718,393,756. Balance sheet at Dec. 31: Assets \$1,458,637, current \$351,140, flying equipment, net \$666,441, land and structures, net \$342,092; current liabilities \$419,876; capital stock issued 262,253 no-par shares of 400,000 authorized, \$903,613; deficit \$24,995.

NATIONAL AVIATION CORP.—Net 1940 income totaled \$892,167, with profit from securities sales, net \$874,634, dividends received \$233,650, interest received \$19,153. Operating expenses were \$123,719, and estimated normal federal income taxes \$111,551. Balance sheet at Dec. 31: Assets \$7,411,415, cash \$1,506,376; current liabilities \$121,077; paid-in surplus \$4,139,368; earned surplus \$764,595.

LUSCOMBE AIRPLANE CORP.—Net loss of \$41,349 in 1940 compared with \$67,241 loss in 1939, while sales increased to \$955,198 from \$471,227. Net income from school \$15,249. Last year 491 planes were delivered against 262 the previous year. Goal for 1941 is 1,000 units. Balance sheet at Dec. 31: Assets \$650,223, current \$286,788, with cash \$23,105; current liabilities \$124,619; paid-in surplus \$201,747; deficit \$153,736.

REPUBLIC AVIATION CORP.—Profit of \$923,332 in 1940 was first in company's eight-year history and equalled 83c a share, after establishing reserves to cover all federal taxes and allotment of \$100,000 to meet dividends due on preferred stock. Net sales totaled \$10,313,745.

DOUGLAS AIRCRAFT CO. INC.—Report for three months ended Feb. 28 shows net profit \$1,819,534, equal to \$3.03 a share, compared with \$1,804,877 and \$3 a year ago. Net sales increased from \$12,920,904 last year to \$17,929,511, a 40% gain.

AERO SUPPLY MFG. CO. INC.—First quarter net profit of \$177,704 equalled 42c a share, compared with \$115,235 and 26c in 1940. Net sales amounted to \$1,578,666 against \$677,306 in like period last year.

UNITED AIRCRAFT CORP.—Net profit for March quarter reached \$4,806,495, after taxes equal to \$1.80 on 2,656,691 shares, compared with \$2,380,029 or 89c same quarter last year. Shipments

New Vultee Official



W. E. Burdick

Director of Army and Navy contracts for Vultee Aircraft Inc. since last November, recently was elected a vice president of the company. Following his early training in aviation, Burdick became a test pilot and sales representative for United Aircraft. Later he joined Sikorsky and prior to last November was a member of Vultee's sales department.

totalled \$54,863,135, against \$16,550,720 in 1940 quarter. E. E. Wilson, president reported that Mar. 17, 1941, amendment to the Second Revenue Act of 1940, retroactive to Jan. 1, 1940, had effect of reducing the excess profits taxes for 1940 from \$11,720,669 to \$9,404,507, the difference being credited to earned surplus.

Anti-Loan Shark Drive

Douglas Aircraft Co. has announced a drive against "loan sharks, extortion vultures and high-pressure salesmen who victimize defense employees by opening a legal office to help employes "resist by legal means" claims and court actions instituted by collection agencies and unethical installment houses."

Company officials recently appeared before the California Senate Judiciary Committee to support a bill which would protect from attachment salaries of employes "necessary for reasonable living expenses."

UNITED AIRCRAFT PRODUCTS

—March quarter net profit was \$18,421, after charges, compared with \$94,221 year ago. Quarter sales were up \$542,846 to \$1,535,151.

Dividend

UNITED AIRCRAFT CORP.—4c share payable June 16 to holders record June 2.

\$550,000 in Orders to Switlik

Switlik Parachute & Equipment Co., Trenton, N. J., recently announced booking of \$550,000 in new business during the first quarter of 1941, including orders from Army, Navy, RAF and commercial accounts for parachutes, belays, flying suits and other aircraft accessories. Present backlog is \$2,000,000.

Wichita Production Leader?

More military aircraft units were produced in Wichita, Kan., during the past 12 months than were completed in any other city in the U. S., the National Aviation Training Association declared in April. This production includes primary and advanced trainers, the group said.

NEW YORK STOCK EXCHANGE

	Week Ended Apr. 26				Week Ended May 3			
	High	Low	Net Change	Sales	High	Low	Net Change	Sales
American Airlines	47 1/4	45 1/2	+ 3/4	2,100	46 3/4	42 1/2	-3 1/2	3,800
Aviation Corp.	3	2 1/2	+ 1/2	29,600	3	2 1/2	—	11,700
Bendix Aviation	34	32 1/2	+ 1 1/2	4,200	35 1/4	33 3/4	+ 1 1/2	2,800
Boeing Airplane	13 3/4	12 3/4	+ 1	6,200	13 1/2	13	+ 1/2	2,300
Consolidated Aircraft	24 1/4	23	+ 1 1/4	1,000	25 1/4	25	+ 1/4	1,000
Continental Motors	3	2 1/2	—	1,000	3 1/2	2 1/2	+ 1	11,800
Curtiss-Wright	8	7 1/2	+ 1/2	22,400	8 1/2	7 1/2	+ 1	26,800
Curtiss-Wright A	25 1/4	24 1/2	—	4,100	26 1/2	25 1/2	+ 1	1,200
Douglas Aircraft	67 3/4	64 1/2	+ 3 1/2	3,900	69 1/4	65 1/2	+ 3 1/2	1,200
Eastern Air Lines	27 3/4	25 1/2	+ 2 1/2	2,000	28 1/4	24 1/2	+ 3 1/2	5,500
Ex-Cell-O	24 1/2	23 1/2	+ 1	2,800	23 1/2	23 1/2	+ 1	1,800
Grumman	13 3/4	12 3/4	—	3,200	14	13 1/2	+ 1/2	700
Lockheed Aircraft Eng.	21	19 1/2	+ 1 1/2	5,800	22 1/2	20 1/4	+ 1 1/2	7,400
Glenn L. Martin	27 1/4	25 1/2	+ 1 1/2	5,700	27 1/2	26 1/2	+ 1	3,300
Natl. Aviation Corp.	7 1/2	7 1/4	—	1,400	7 3/4	7 1/4	+ 1/2	800
N. American Aviation	12 1/2	12 1/2	+ 1/2	6,800	13 1/2	12 1/2	—	3,300
Northwest Airlines	8 1/2	8 1/2	—	300	8 1/2	8 1/2	—	800
Pan American Airways	10 1/2	10	+ 1/2	6,600	11 1/2	10 1/2	—	1,800
Sperry Corp.	31 1/4	29	+ 1 1/4	4,000	33	31 1/2	+ 1 1/2	4,700
Square D Co.	32 1/2	32	+ 1/2	1,000	34	32 1/2	+ 1 1/2	800
Thompson Products	27 1/2	26	—	500	27	25 1/2	—	800
TWA	11 3/4	11 1/2	— 1/2	500	11 1/2	11 1/2	— 1/2	1,800
United Air Lines	11 1/2	10 1/2	—	2,900	11 1/2	10 1/2	+ 1/2	1,800
United Aircraft	36 1/4	34 1/4	+ 1 1/4	3,900	38 1/2	35 1/2	+ 2 1/2	6,300
Wright Aeronautical	87	86	— 1	20	—	—	—	—

NEW YORK CURB EXCHANGE

	Week Ended Apr. 26				Week Ended May 3			
	High	Low	Net Change	Sales	High	Low	Net Change	Sales
Aero Supply B	5 1/2	5 1/4	—	500	5 1/2	5 1/4	— 1/2	—
Air Associates	10 1/2	10	+ 1/2	200	10 1/2	10 1/2	—	—
Air Investors	1	1	—	300	1 1/4	1 1/4	+ 1/4	—
Air Investors cv pf	21	21	— 1 1/2	300	—	—	—	—
Air Investors war	4 1/2	4 1/2	— 1/2	400	—	—	—	—
Beech Aircraft	17 1/2	17	— 1/2	2,500	17 1/2	17 1/2	+ 1/2	2,200
Bell Aircraft	3 1/2	3 1/2	—	400	18	17	—	1,200
Bellanca Aircraft	7 1/2	7 1/2	+ 1/2	1,700	3 1/2	3 1/2	—	—
Breeze Corps	7 1/2	7 1/2	+ 1/2	2,000	7 1/2	7 1/2	+ 1/2	1,200
Brewster Aero	7 1/2	7 1/2	+ 1/2	2,400	8 1/2	7 1/2	+ 1/2	1,200
Canadian Colonial	3 1/2	2 1/2	— 1/2	1,900	2 1/2	2 1/2	— 1/2	—
Cessna Aircraft	4	3 1/2	+ 1/2	600	4	3 1/2	— 1/2	—
Fairchild Aviation	8 3/4	7 1/2	— 1 1/2	700	8 1/2	7 1/2	— 1	—
Fairchild Eng. & Air	2 1/2	2 1/2	+ 1/2	2,400	3 1/4	2 3/4	+ 1/2	2,100
Irving Air Chute	10	9 1/2	— 1/2	600	10 1/2	9 3/4	+ 1/2	1,800
Penn.-Central Airlines	10 1/2	10	+ 1/2	1,100	10 1/2	9 3/4	— 1	2,100
Republic Aviation	3 1/2	3 1/2	+ 1/2	5,000	3 1/2	3 1/2	— 1/2	—
Roosevelt Field	—	—	—	—	2	1 1/2	—	—
Ryan Aeronautical	3	3	—	300	3	3	—	—
Vultee Aircraft	5	4 1/2	+ 1/2	700	5 1/2	5	—	—
Waco Aircraft	3	3	— 1/2	200	—	—	—	—
Western Air Lines	3 1/2	3 1/2	— 1/2	300	3 1/2	3 1/2	+ 1/2	—

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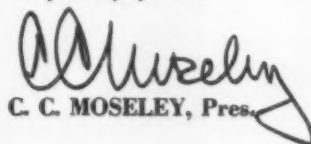
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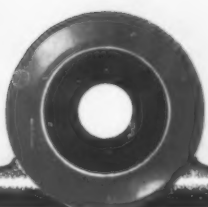


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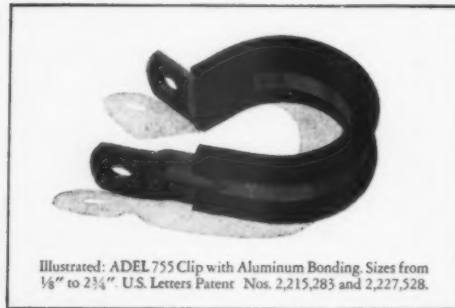

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